[HOSPITAL / HEALTH AUTHORITY NAME]

EMERGENCY DEPARTMENT INVESTIGATIONS, CRITICAL RESULTS, AND RESULTS TRACKING PROTOCOL

Protocol 5: Diagnostic Stewardship, Closed-Loop Result Management, and Safe Follow-up

DRAFT FOR CLINICAL, NURSING, LABORATORY, RADIOLOGY, INFORMATION-TECHNOLOGY, AND PATIENT-SAFETY REVIEW

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Related policies	ED-PRO-001: ED Patient Journey; ED-PRO-002: Triage and Retriage; ED-PRO-003: Resuscitation and Initial Stabilization; ED-PRO-004: Clinical Assessment and Documentation
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Review date	[12 months after implementation, then every 2-3 years or sooner after major diagnostic, information-system, regulatory, or service change]
Approved by	[Medical Executive / Nursing Executive / Laboratory Director / Radiology Lead / Clinical Governance / Hospital Board]
Applies to	All staff who request, collect, transport, perform, interpret, communicate, receive, review, act on, hand over, or audit Emergency Department diagnostic tests
Supersedes	[Insert previous diagnostic-results or critical-values policy, if applicable]

Important: *This protocol governs the diagnostic process and the ownership of results. It does not prescribe a fixed investigation bundle for every presentation, replace condition-specific pathways, or authorize staff to perform tests outside their scope. Necessary treatment and stabilization must not be delayed while awaiting investigations.*

Contents

The diagnostic loop is closed only when the correct result reaches an accountable person, is understood, acted upon, communicated as required, and documented.

1. Purpose

To ensure that Emergency Department investigations are clinically justified, correctly ordered and performed, safely communicated, reviewed within an appropriate time, acted upon, and reliably tracked across every transition of care. The protocol aims to reduce wrong-patient testing, specimen errors, delayed diagnosis, missed critical results, unreviewed pending tests, unnecessary testing, avoidable radiation or contrast exposure, and failures to inform patients or receiving teams.

2. Scope

This protocol applies from the decision to investigate until the diagnostic loop is closed. It covers laboratory tests, microbiology, blood-bank testing, pathology, diagnostic imaging, electrocardiography, point-of-care tests, bedside ultrasound and other locally authorized bedside diagnostics, external referral tests, preliminary and final reports, amended or discrepant reports, incidental findings, results pending at disposition, and the associated communication and documentation.

3. Core policy statements

- Every investigation shall have a clinical question, an appropriate level of urgency, and a named clinician or team responsible for reviewing and acting on the result.
- No patient shall be tested, sampled, imaged, transfused, or treated on the basis of a diagnostic result without reliable patient identification using at least two approved identifiers whenever possible.
- Investigations shall be proportionate to the patient's presentation, risk, physiology, and likely effect on management. Routine panels and indiscriminate "screening" shall not replace clinical assessment.
- Life-saving treatment shall begin when indicated and shall not be delayed solely to obtain or await a test.
- Critical results and urgent unexpected findings require direct, time-limited, closed-loop communication to an accountable clinician, with escalation when the first recipient cannot be reached.
- An order is not complete merely because a specimen was sent or a test was performed. The result must be reviewed, interpreted in context, acted upon, and documented.
- Transfer of a patient does not automatically transfer ownership of pending results. Ownership must be explicitly handed over and accepted.
- Discharge with a pending result is permitted only when it is clinically safe and a documented follow-up system identifies who will review the result, how the patient will be contacted, what action is anticipated, and how failure to contact will be escalated.
- Preliminary reports, final reports, addenda, amended results, imaging discrepancies, incidental findings, and test failures shall be managed through a defined safety-net process.
- Diagnostic delays caused by crowding, equipment failure, staffing shortages, reagent shortages, transport problems, or information-system failure shall be actively escalated and shall influence monitoring and disposition decisions.

4. Definitions

Term	Operational definition
Diagnostic loop	The sequence from clinical question and test order through performance, interpretation, communication, review, action, patient/receiving-team notification, and documented closure.
Result owner	The named clinician or formally designated team responsible for ensuring that a result is reviewed, interpreted, acted upon, communicated as necessary, and documented.

Term	Operational definition
Critical result	A result or finding defined by the hospital as representing a potentially life-threatening or immediately harmful condition requiring urgent direct communication and action.
Urgent unexpected finding	A significant finding that may not meet the local critical-value list but requires prompt clinical attention because delay could cause harm.
Significant incidental finding	A potentially important abnormality discovered during testing for another reason and requiring disclosure, follow-up, or referral.
Preliminary result	An initial interpretation issued before the authorized final report and subject to confirmation or amendment.
Amended / corrected result	A result changed after initial release because of error, additional information, reinterpretation, or quality review.
Discrepancy	A clinically meaningful difference between a preliminary and final interpretation, between two interpreters, or between a diagnostic report and subsequent information.
Pending result	A test ordered or collected for which a definitive result or final report is not available when responsibility or location changes.
Nondiagnostic test	A test that cannot answer the intended clinical question because of technical limitation, inadequate sample, timing, patient factors, or incomplete performance.
Diagnostic stewardship	Selecting, ordering, performing, interpreting, and acting on tests in a way that maximizes clinical benefit and minimizes avoidable harm, delay, waste, and resource use.
Closed-loop communication	Transmission of information to an accountable recipient, confirmation that it was received and understood, completion of required action or transfer of responsibility, and documentation.
Turnaround time	The defined interval between specified stages of the diagnostic process, such as collection-to-receipt, receipt-to-result, or result-to-communication.
Point-of-care testing	Authorized diagnostic testing performed near the patient by trained staff outside the central laboratory, under an approved quality-management programme.

5. Roles and accountability

Role	Minimum accountability
ED medical lead	Owns ED diagnostic governance; approves clinical pathways, escalation standards, audit, and corrective action with diagnostic departments.
Responsible ED clinician	Selects and orders appropriate tests; confirms urgency and patient factors; reviews and interprets results; acts, reassesses, communicates, and records ownership at transition.

Role	Minimum accountability
ED nurse	Confirms identifiers; prepares and collects specimens within scope; records collection and transport; monitors the patient; escalates deterioration, delays, rejected samples, and unacknowledged critical results.
Laboratory director / scientist	Maintains test directory, specimen requirements, rejection criteria, critical-value list, validation, quality control, turnaround standards, direct critical-result communication, and downtime processes.
Radiology lead / interpreting clinician	Maintains imaging protocols, safety screening, reporting standards, urgent-finding communication, discrepancy/addendum processes, and quality review.
Point-of-care testing coordinator	Authorizes devices and users; maintains training, competency, quality control, connectivity, maintenance, reagent control, and result integration.
Phlebotomy / specimen collector	Uses approved identification and collection procedures; labels at the bedside; documents collection; packages and transports specimens safely.
Ward / receiving team	Explicitly accepts ownership of pending results at admission or transfer and documents review and action.
Health information / IT	Supports reliable order entry, time stamps, alerts, acknowledgement, audit trails, patient identification, downtime recovery, and result-routing rules.
Clinical governance / quality	Reviews incidents, delayed results, missed follow-up, diagnostic harm, audit data, and system-level corrective actions.
Hospital executive	Provides staffing, equipment, contracts, maintenance, transport, referral arrangements, and governance needed for safe diagnostic services.

6. Diagnostic stewardship and test selection

- Begin with the clinical problem, acuity, dangerous alternatives, and decision that the test is expected to inform.
- Order a test only when the result is reasonably expected to change treatment, monitoring, disposition, prognosis, isolation, public-health action, or an important follow-up decision.
- Use approved presentation pathways, decision rules, age-appropriate reference standards, and imaging appropriateness guidance where available.
- Avoid duplicating a recent test unless the clinical condition, timing, sample quality, trend, or treatment response justifies repetition.
- Consider whether observation and serial clinical assessment may be safer or more informative than immediate broad testing.
- Consider pre-test probability, false-positive and false-negative consequences, test limitations, timing of disease, and effect of treatment already given.
- Use the least invasive, least harmful, and most resource-proportionate test that can answer the clinical question.
- Where a required test is unavailable, delayed, or unreliable, document the limitation and use an alternative plan: empirical treatment, enhanced observation, consultation, transfer, or explicit safety-netting.

- Do not use tests to substitute for an examination, to satisfy non-clinical convenience, or solely because they are available.

Before ordering, ask: What decision will this result change, who will review it, and what will happen if it is delayed or unavailable?

7. Ordering and patient identification

- Use at least two approved patient identifiers on the order and at the bedside. Room, trolley, or bed number is not an identifier.
- For an unidentified patient, use the approved temporary identifier consistently across the record, specimen labels, blood bank, and imaging until formal reconciliation is completed.
- Enter the clinical indication, relevant question, urgency, specimen/site, laterality, date and time, requesting clinician, and contact details required by the performing department.
- Include material patient factors: age, pregnancy possibility, renal function, allergies, anticoagulation, infection risk, recent contrast, implants, devices, weight, medications, and prior relevant studies as applicable.
- Use emergency or verbal orders only under the approved process. The receiving person shall read back the test, patient identity, and urgency; the order shall be authenticated promptly.
- Cancel obsolete or duplicate orders and document when a planned test is intentionally not performed.
- When a test is ordered after handover or by a consultant, confirm which clinician or service owns the result.

8. Specimen collection, labelling, transport, and rejection

8.1 Collection and bedside labelling

- Explain the procedure and obtain consent where required; use standard precautions and the correct collection equipment.
- Match the patient, order, container, specimen type, and collection site before collection. For blood-bank specimens, follow the separately approved enhanced identification procedure.
- Label each specimen in the patient's presence immediately after collection, never in advance or at another location.
- Record the approved identifiers, specimen/source, date and time, collector identity, and any other laboratory-required information.
- Observe correct order of draw, volume, anticoagulant ratio, aseptic technique, timing relative to antibiotics or medications, and storage/temperature requirements.
- For blood cultures or sterile-site samples, document collection site and timing and obtain before antibiotics when clinically safe without delaying urgent therapy.

8.2 Packaging and transport

- Place specimens in approved leak-proof packaging and biohazard transport systems; separate request documentation from the specimen where required.
- Transport urgent, unstable, time-sensitive, temperature-sensitive, and blood-gas specimens immediately according to the laboratory handbook.
- Record dispatch and receipt times when delays would affect validity or patient safety.
- Use the approved chain-of-custody process for forensic, legal, toxicology, or other designated specimens.

8.3 Rejection and recollection

- The laboratory shall use written rejection criteria, including wrong or missing identification, incompatible order/specimen, incorrect container, inadequate volume, clotting, contamination, leakage, unacceptable delay or temperature, and compromised integrity.

- A rejected specimen shall be communicated promptly to the ED with the reason, clinical consequence, and recollection requirement. The ED shall acknowledge the message and assign recollection responsibility.
- An irreplaceable or high-risk specimen shall not be discarded without senior laboratory-clinical discussion and documented risk assessment.
- Recurrent collection or labelling errors shall trigger incident reporting, review, and competency action.

9. Diagnostic imaging and radiation/contrast safety

- The imaging request shall state the clinical question, relevant history and examination, urgency, anatomical site and laterality, prior studies, and relevant risks.
- Confirm patient identity and the intended examination immediately before imaging. The radiographer or imaging practitioner shall stop and clarify any mismatch or unsafe request.
- Consider pregnancy possibility and use approved pregnancy-screening procedures without delaying immediately life-saving imaging when benefit clearly outweighs risk.
- Assess contrast allergy history, renal risk, metformin or other relevant medicines, vascular access, and other modality-specific contraindications according to local radiology policy.
- Use the lowest reasonable radiation exposure and avoid duplicate imaging. Retrieve prior images when feasible.
- Patients leaving the ED for imaging must have appropriate monitoring, oxygen, medications, escort, and resuscitation capability based on current risk.
- An unstable patient shall not be transported to imaging without a responsible clinician's risk-benefit decision and adequate stabilization and escort.
- When imaging is unavailable locally, the clinician shall document the alternative plan and consider consultation, observation, empirical management, transfer, or remote reporting.
- Bedside ultrasound findings shall be integrated with the clinical assessment, image-storage and credentialing requirements, and a confirmatory plan where the examination is limited.

10. Point-of-care testing, ECG, and bedside diagnostics

- Only trained, currently competent, authorized staff may use approved devices or interpret tests within their scope.
- Confirm patient identity and enter or attach the result to the correct encounter. Handwritten or disconnected-device results must be transcribed and verified under an approved process.
- Perform and document required quality control, calibration, maintenance, reagent-lot and expiry checks. Do not use a device that fails quality control or appears unreliable.
- Unexpected, physiologically implausible, or clinically discordant results shall be repeated or confirmed by the central laboratory or another validated method when safe and appropriate.
- Point-of-care results meeting local critical thresholds require the same urgent communication and action as central laboratory results.
- ECGs shall be time stamped, linked to the correct patient, reviewed promptly by an accountable clinician, compared with prior tracings where relevant, and documented with the interpretation and action.
- Bedside tests do not remove the need for reassessment or for confirmation when the test's sensitivity, specificity, or technical quality is insufficient for the decision.

11. Test prioritization, turnaround, and delay escalation

Priority	Operational meaning	Required response
Immediate / resuscitation	Delay may directly threaten life or limb.	Perform and communicate as the highest priority; treatment proceeds concurrently; unresolved delay is escalated immediately.

Priority	Operational meaning	Required response
Urgent	Result is needed soon to guide active ED treatment, monitoring, or disposition.	Use the local urgent pathway and target; monitor progress; escalate when target is likely to be missed.
Routine ED	Result is needed during the encounter but does not require emergency processing.	Perform within the locally defined ED service standard; ownership remains explicit.
Send-out / deferred	Result will not be available during the encounter.	Use pending-result tracking and documented follow-up ownership before disposition.

- The laboratory, radiology, and ED shall publish realistic service hours, expected turnaround intervals, downtime contacts, and escalation pathways.
- Clinicians shall not rely on an assumed turnaround time. When a result is decision-critical, communicate the urgency and verify progress.
- Delays must be communicated proactively when they may change treatment or disposition. Record the cause, expected resolution, alternative plan, and person informed.
- A patient awaiting a delayed result shall remain under appropriate observation and reassessment; administrative pressure shall not justify unsafe discharge.
- Recurrent turnaround failures shall be reviewed jointly by the ED and diagnostic service using time-stamped data rather than anecdote alone.

12. Result receipt, review, acknowledgement, and action

1. The result becomes available in the approved system or is directly communicated.
2. The result owner reviews it in the context of the patient's condition, prior results, reference range, test limitations, and treatment already given.
3. The clinician determines whether the result confirms, modifies, or refutes the working diagnosis and whether immediate reassessment is required.
4. Required treatment, further testing, consultation, isolation, admission, transfer, or follow-up is initiated.
5. The review, interpretation, action, communication, and any unresolved uncertainty are documented.
6. The result is marked acknowledged only after clinical review, not merely because an alert was opened or a message was received.
7. If the result belongs to another team after a documented transfer, that team confirms acceptance; otherwise the original owner remains responsible.

"Seen" is not the same as "managed." A result is closed only when the clinical consequence has been addressed or explicitly transferred.

13. Critical results and urgent unexpected findings

13.1 Local written procedure

- The hospital shall maintain an approved list of critical laboratory values and urgent diagnostic findings, including age- or service-specific thresholds where required.
- The written procedure shall define who may report, who may receive, the acceptable time from availability to reporting, the escalation chain, read-back requirements, documentation, and audit method.
- Critical lists shall be reviewed jointly by the relevant clinical and diagnostic departments at least annually or after a serious incident or service change.

13.2 Closed-loop communication process

- The reporting professional confirms the patient using at least two identifiers and states the test, result/finding, date and time, urgency, and recommended immediate communication or action if applicable.
- The recipient states their name and role, reads back the patient identifiers and result, and confirms responsibility for immediate action or transfer to the responsible clinician.
- The reporting professional documents the result, time available, time communicated, recipient, read-back, attempts, and escalation.
- The clinical recipient documents the interpretation, patient reassessment, action, and further communication.
- Unacknowledged electronic alerts, voicemail, routine email, or messages left with an unauthorized person do not constitute closed-loop critical-result communication.

13.3 Escalation when the responsible clinician cannot be reached

- Use the locally approved escalation ladder without waiting for repeated unsuccessful calls to the same person.
- Escalate sequentially to the ED clinician currently responsible for the patient, senior ED clinician, nurse in charge, on-call specialty clinician, and duty hospital administrator or medical executive as locally configured.
- When the patient has left and immediate harm is possible, use all authorized contact methods and involve emergency services or public-health authorities when legally and clinically appropriate.
- Report system failures and delays through the patient-safety incident process even when no harm is identified.

14. Preliminary, amended, discrepant, incidental, and nondiagnostic findings

Situation	Required safety process
Preliminary report	Label clearly; identify author and time; communicate limitations; ensure final report review remains assigned.
Final report differs materially from preliminary	Classify clinical significance; directly inform an accountable clinician within the locally approved timeframe; reassess or contact the patient as necessary; document closure.
Corrected or amended laboratory result	Withdraw or flag the superseded result; notify the clinical owner when management may be affected; document revised action.
Significant incidental finding	State the finding and recommended follow-up; inform the responsible clinician and patient/receiving team; assign and track follow-up ownership.
Nondiagnostic / incomplete test	Communicate the limitation; decide whether to repeat, use an alternative, observe, treat empirically, consult, or transfer.
Unexpected result inconsistent with the patient	Verify identity, collection, device, specimen, units and reference range; repeat or confirm where appropriate; do not dismiss without documented resolution.
Result received after patient death or transfer	Route to the responsible consultant/team and document whether it changes certification, family communication, infection control, public health, or quality review.

15. Pending results at handover, admission, transfer, or discharge

15.1 Shift handover and observation

- Every pending test shall appear on the handover with patient identity, test, collection/order time, reason, expected availability, clinical concern, action threshold, and named receiver.

- The receiving clinician must explicitly accept ownership. Generic statements such as “labs pending” are insufficient.
- Pending-result lists shall be reconciled at each shift change and before a clinician leaves duty.

15.2 Admission or internal transfer

- The ED remains responsible until the receiving team accepts the patient and the outstanding diagnostic tasks.
- Pending and preliminary results, required repeats, planned imaging, and unresolved discrepancies shall be included in verbal and written handover.
- Critical results received before acceptance remain the ED’s responsibility; results received after accepted transfer follow the hospital’s defined routing rules.

15.3 Interfacility or overseas transfer

- Send available reports, images, ECGs, trends, specimen information, and pending-result details with the patient or through a secure channel.
- Confirm which institution and named clinician will review results that return after departure and how they will be transmitted.
- Do not assume that an external facility can access the originating hospital’s electronic system.

15.4 Discharge with pending results

- Discharge is permitted only when the patient is clinically suitable and the pending result is not required to exclude an immediate danger that still needs ED observation or admission.
- Document the test, reason, expected time, named reviewer, contact method, action plan, fallback if the patient cannot be reached, and follow-up service.
- Tell the patient that a result is pending, whether they should expect contact even if normal, how to update contact details, and where to seek care if symptoms worsen.
- High-risk pending results require a tracked work queue, daily reconciliation, and escalation for overdue review or failed contact.

16. Patient communication and follow-up

- Communicate results in clear, respectful language appropriate to the patient’s needs, using an interpreter when required.
- Explain the result, degree of certainty, relevance, required treatment or follow-up, warning signs, and what remains unknown.
- For significant abnormal or incidental findings, use teach-back and provide written instructions whenever feasible.
- Confirm patient identity before telephone or electronic disclosure. Do not leave sensitive clinical details in voicemail or with another person unless authorized and permitted by local policy.
- Document the date, time, method, person contacted, information given, questions, agreed plan, and unsuccessful attempts.
- When contact fails, follow a graded process based on urgency: repeat calls, alternative authorized contacts, primary-care or public-health liaison, registered correspondence, welfare check, or emergency services as locally approved.
- Patient portals and automatic release may supplement but do not replace direct communication for critical, urgent, complex, or potentially distressing results.

17. Downtime, network failure, and external/referral tests

17.1 Downtime

- Activate the approved paper order, specimen log, manual result, and communication processes when electronic systems are unavailable.

- Use unique patient and specimen identifiers; time stamp every stage; maintain a visible pending-test board or log under controlled access.
- Diagnostic services shall telephone or securely transmit critical and urgent results and retain a downtime record.
- After restoration, reconcile every order, specimen, result, critical communication, amendment, and pending task into the permanent record. Do not assume automatic back-loading is complete.

17.2 External or referral tests

- Record the destination laboratory or imaging provider, dispatch date and time, transport method, expected turnaround, costs or authorization barriers, and responsible reviewer.
- Use secure transmission and verify that identifiers, specimen conditions, and clinical information meet the referral service's requirements.
- Maintain a trackable log until the result is received, reviewed, communicated, and closed.
- If a result is overdue, contact the provider and document the escalation rather than waiting passively.

18. Special populations and circumstances

Population / circumstance	Additional safeguards
Children	Use age-specific reference ranges and critical thresholds, weight-based decisions, guardian communication, and safeguarding pathways. Confirm sample volumes are appropriate.
Pregnancy / possible pregnancy	Apply pregnancy-screening, radiation, contrast and fetal-monitoring policies; do not withhold necessary emergency imaging when delay poses greater risk.
Older adults / frailty	Interpret results against baseline function, medicines, hydration, renal function, and atypical presentations; ensure follow-up support is realistic.
Patients unable to communicate	Use collateral history, records, interpreters or supported decision-making; identify a lawful representative; avoid assuming consent or baseline cognition.
Behavioural emergency / intoxication	Do not attribute physiological abnormality to behaviour or intoxication without appropriate assessment; secure specimens and maintain observation.
Sexual assault / forensic cases	Use consent, chain-of-custody, evidence-kit, privacy and specialist referral procedures; clinical care takes priority.
High-consequence infection	Use isolation, notification, specimen packaging, transport, and public-health procedures; protect staff while avoiding delays in urgent care.
Mass casualty / surge	Use approved abbreviated identifiers, essential-test prioritization, manual tracking, and incident-command allocation while preserving critical-result communication.
Unidentified patient	Maintain one temporary identity across all systems and carefully reconcile later; do not relabel specimens retrospectively without an authorized process.
Blood transfusion testing	Follow the separate blood-bank identification, sampling, compatibility, release, and transfusion policy; never bypass required identity safeguards because of urgency.

19. Documentation and record closure

- Record the clinical indication, test and urgency, date and time ordered and collected, result availability, review time, interpretation, action, communication, and result owner.
- Document delays, rejected or lost specimens, failed or incomplete tests, repeat requests, patient refusal, limitations, and alternative plans.
- For critical or urgent findings, record sender, recipient, time, read-back, escalation, patient reassessment, and action.
- For pending results, document explicit ownership and follow-up before handover or disposition.
- Do not close the ED encounter record while high-risk results are unassigned. Electronic closure may occur only after the outstanding-task system captures the responsibility reliably.
- Corrections and addenda shall preserve the original audit trail and follow Protocol 4.

20. Incident reporting and quality improvement

- Report wrong-patient or wrong-site testing, mislabelled or lost specimens, serious collection errors, uncommunicated critical results, delayed action, missed pending results, significant imaging discrepancies, unsafe discharge, information-system routing failures, and diagnostic harm.
- Immediate clinical recovery takes priority: contact the patient, correct treatment, repeat or confirm testing, escalate, and preserve relevant records and specimens.
- Use a just-culture review to distinguish human error, risky workarounds, inadequate training, equipment or interface failure, workload, and reckless conduct.
- Include laboratory, radiology, nursing, medical, IT, records, and patient representatives where appropriate in system review.
- Implement measurable corrective actions and verify that they reduce recurrence.

21. Quality indicators and audit

Indicator	Suggested definition / denominator
Correct patient identification	Percentage of audited test orders/specimens with two approved identifiers and no mismatch.
Specimen rejection rate	Rejected ED specimens divided by all ED specimens, stratified by reason and shift.
Critical-result timeliness	Percentage communicated within the locally approved interval from result availability.
Closed-loop completeness	Percentage of critical results with recipient, read-back, action, and time documented.
Pending-result ownership	Percentage of discharged/transferred patients with pending tests and a named accepted owner.
Overdue pending results	Number and proportion not reviewed by the defined expected time.
Imaging discrepancy closure	Percentage of clinically significant preliminary-final discrepancies acknowledged and acted upon within target.
Incidental-finding follow-up	Percentage with patient/receiving-team notification and documented follow-up plan.

Indicator	Suggested definition / denominator
Turnaround performance	Median and 90th percentile order/collection-to-result time for selected urgent tests.
Duplicate / low-value testing	Locally selected measure of avoidable repeat or unindicated tests.
Downtime reconciliation	Percentage of downtime orders and results fully reconciled after restoration.
Diagnostic-result incidents	Number, severity, contributory factors, and recurrence of result-management safety reports.

Local governance note: *Targets must reflect available services but should be clinically defensible. A low-resource setting still requires explicit ownership, escalation, and communication; resource constraints must not become invisible delays.*

22. Training and implementation

- Approve the local critical-value/finding lists, response times, escalation contacts, result-routing rules, and pending-result work queues before go-live.
- Train all ED, laboratory, imaging, transport, clerical, and receiving-team staff in their role, including downtime and handover scenarios.
- Assess competency for specimen collection, blood-bank sampling, point-of-care testing, ECG acquisition, critical-result read-back, and pending-result tracking.
- Use simulations and tracing exercises from order to closure, including wrong-patient risk, rejected samples, critical results after discharge, imaging discrepancies, and IT downtime.
- Provide reliable access to the laboratory handbook, imaging request requirements, service hours, send-out arrangements, and contact lists.
- Audit at 1, 3, 6, and 12 months after implementation, then at least annually, with feedback to frontline teams and executive oversight.

Annex A. One-page diagnostic-loop workflow

Step	Bedside / system action
1. Frame the question	Identify the dangerous possibilities and the decision the test will inform.
2. Select the test	Use the least harmful, proportionate, available test; consider limitations and alternatives.
3. Identify and order	Use two identifiers; state indication, urgency, relevant risks, and named result owner.
4. Collect / perform	Correct patient, site, specimen/device, technique, timing, labelling, and quality controls.
5. Transport / process	Meet time, temperature, packaging, chain-of-custody, and priority requirements.
6. Monitor	Reassess the patient while waiting; track delays; do not let the test replace clinical observation.
7. Receive and review	Interpret in context; verify discordant results; review preliminary and final reports.
8. Act	Treat, repeat, consult, isolate, admit, transfer, observe, or arrange follow-up.
9. Communicate	Critical/urgent findings use closed-loop communication; explain significant results to patient/receiver.
10. Close	Document action and ownership; reconcile pending results and ensure final follow-up.

NO RESULT WITHOUT AN OWNER • NO CRITICAL RESULT WITHOUT CLOSED-LOOP COMMUNICATION • NO DISPOSITION WITHOUT A PENDING-RESULT PLAN

Annex B. Investigation-order safety checklist

- ☐ Patient confirmed with two approved identifiers or approved temporary identity.
- ☐ Clinical question and expected decision are clear.
- ☐ Test is appropriate and not an avoidable duplicate.
- ☐ Urgency is correctly assigned and communicated.
- ☐ Relevant history, site/laterality, pregnancy, allergy, renal risk, medications, devices, and prior studies supplied.
- ☐ Result owner and reliable contact method identified.
- ☐ Patient preparation, consent, escort, monitoring, and infection precautions addressed.
- ☐ Alternative plan defined if the test is delayed, unavailable, nondiagnostic, or refused.
- ☐ Pending-result plan anticipated before shift end or disposition.

Annex C. Critical-result communication algorithm

Time-linked action	Required documentation
1. Validate	Confirm analytical/interpretive validity according to diagnostic-service policy; do not create avoidable delay.
2. Identify	Use two identifiers; state test, result/finding, time, and urgency.
3. Contact accountable clinician	Use direct verbal or approved synchronous communication.
4. Read-back	Recipient repeats patient identifiers and result; sender confirms accuracy.
5. Act	Recipient reassesses patient and initiates required intervention.
6. Escalate	If no timely response, progress through the approved escalation chain.
7. Document	Record availability time, communication attempts, recipient, read-back, escalation, clinical action, and closure.
8. Audit	Capture delays and failures for review.

Annex D. Pending-results handover tracker

Patient / ID	Test and reason	Ordered / collected	Expected	Action threshold	Current owner	Accepted by / time	Closed / action

Use: *This tracker supplements, but does not replace, the permanent clinical record. It must be protected from unauthorized access and reconciled at every shift change.*

Annex E. Discharge with pending results checklist

- ☐ Patient is clinically safe for discharge without the result.
- ☐ The pending test cannot reasonably conceal an immediate danger requiring continued ED observation or admission.
- ☐ Named clinician/service will review by a defined time.
- ☐ Result appears in a tracked queue or log, not only the general inbox.
- ☐ Patient contact details and authorized alternative contact are verified.
- ☐ Patient understands what is pending, expected timing, contact plan, return precautions, and follow-up.
- ☐ Escalation plan exists for an abnormal result, overdue result, or failed contact.
- ☐ Final review, communication, and action will be documented.

Annex F. Imaging discrepancy and incidental-finding pathway

Finding category	Minimum action
Category 1: Immediately life-threatening	Direct immediate communication; ED/receiving clinician reassesses and acts; document read-back and closure.
Category 2: Urgent management change	Direct prompt communication within local target; contact patient if discharged; record action.
Category 3: Important non-urgent / incidental	Notify responsible clinician and patient/receiver; provide follow-up recommendation; assign tracking ownership.
Category 4: Minor difference, no management change	Issue final report/addendum according to radiology policy; no separate contact unless clinically indicated.
Nondiagnostic study	Communicate limitation and recommended repeat or alternative; clinician documents disposition decision.

Annex G. Specimen rejection and recollection record

Field	Record
Patient identifiers	
Test / specimen / source	
Collection date/time and collector	
Rejection reason	
Potential clinical consequence	
Laboratory communicator and time	
ED recipient and read-back	
Recollection owner and target time	
Alternative plan if recollection impossible	
Incident report number, if required	
Closure date/time and result	

Annex H. Local critical results and response-time configuration

This annex must be completed jointly by the ED, laboratory, radiology, cardiology/ECG, paediatrics, obstetrics, and clinical governance before implementation.

Diagnostic area	Critical result / finding	Population or exception	Who reports	Primary recipient	Maximum reporting time	Escalation
Laboratory						
Microbiology						
Blood bank						
Radiology						
ECG / cardiac diagnostics						
Point-of-care testing						
Other						

Annex I. Diagnostic-result audit tool

Audit item	Yes	No	N/A	Notes / evidence
Two identifiers used on order/specimen/test				
Clinical indication and urgency recorded				
Named result owner evident				
Specimen collection and transport requirements met				
Available results reviewed before disposition				
Critical result communicated with read-back within target				
Clinical action and reassessment documented				
Pending results handed over to an accepted owner				

Audit item	Yes	No	N/A	Notes / evidence
Patient informed of significant finding / follow-up				
Preliminary-final discrepancy or addendum closed				
Downtime or external test reconciled				
Any delay or error appropriately reported				

Annex J. Local configuration table

Item requiring local approval	Approved arrangement
ED laboratory service hours and urgent-test menu	
Radiology modalities, service hours, and remote-reporting arrangements	
Point-of-care tests and authorized staff groups	
Critical laboratory values / diagnostic findings	
Critical-result time targets and escalation ladder	
Urgent and routine ED turnaround targets	
Specimen collection manual and rejection criteria	
Blood-bank emergency sampling process	
Pending-results work queue and daily reconciliation owner	
Imaging discrepancy and incidental-finding categories	
External referral laboratories / imaging providers and couriers	
Patient contact and failed-contact escalation process	
Downtime paper forms, logs, telephone numbers, and reconciliation lead	
Data retention, privacy, patient-portal, and result-release rules	
Audit schedule and responsible committee	

Annex K. References and source tools

World Health Organization. Emergency Care Toolkit.
https://www.who.int/teams/integrated-health-services/clinical-services-and-systems/emergency-and-critical-care/emergency-care-toolkit

World Health Organization. Standardized Clinical Forms for emergency care.
https://www.who.int/tools/standardized-clinical-forms

World Health Organization. Laboratory Quality Management System: Handbook.
https://iris.who.int/bitstreams/0772adf4-743a-48bb-843b-7ef4c2dc6896/download

World Health Organization. Laboratory Quality Stepwise Implementation tool: sample collection and sample management resources. https://extranet.who.int/lqsi/

The Joint Commission. National Performance Goals effective January 2026: Right Patient, Right Care; timely critical-result reporting and handoff communication. https://www.jointcommission.org/en-us/standards/national-performance-goals/right-patient-right-care

American College of Radiology. Practice Parameter for Communication of Diagnostic Imaging Findings.
https://gravitas.acr.org/PPTS/GetDocumentView?docId=74

American College of Radiology. Incidental Findings resources. https://www.acr.org/Clinical-Resources/Clinical-Tools-and-Reference/Incidental-Findings

Agency for Healthcare Research and Quality. Diagnostic safety and closed-loop communication of test results resources. https://psnet.ahrq.gov/issue/advancing-safety-closed-loop-communication-test-results

Local laboratory handbook, radiology policies, blood-bank manual, infection-prevention policy, privacy law, and health-record policy. [Insert local sources]

> ***Reference note:*** *External standards support the governance principles in this draft. The final protocol must be reconciled with national law, available services, local scopes of practice, laboratory and imaging manuals, and the hospital's approved critical-result definitions and response times.*

Local approval and sign-off

Role	Name	Signature	Date
Emergency Department Medical Lead			
Emergency Department Nursing Lead			
Laboratory Director / Lead Scientist			
Radiology / Diagnostic Imaging Lead			
Point-of-Care Testing Coordinator			
Health Information / IT Lead			
Clinical Governance / Patient Safety Lead			
Medical Executive			
Nursing Executive			
Hospital Administrator / Board Representative			

Before approval, complete Annexes H and J, test the workflow during day and night shifts, and verify that every critical and pending result has a reachable accountable owner.