



Improving Response to Critical Laboratory Results with Secure Messaging

George Bernard Shaw once said, “The single biggest problem in communication is the illusion that it has taken place.” This is especially true in the healthcare sector. Unfortunately, ineffective diagnostic communication can have dire consequences for patients. It is estimated that there are 40,000–80,000 deaths in the United States each year due to diagnostic errors. Poor communication of laboratory test results is a contributing factor to these errors.



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Critical laboratory results, also known as panic results or values, are defined as test results that exceed established high or low limits. Abnormal results are not the same as critical values. “Abnormal” and “critical” are not used interchangeably.

Critical results are considered life-threatening and require corrective action to be taken promptly. After the result has been verified and entered into the lab’s computer system, notifications are sent to the patient’s physician and/or physician’s representative, the ordering entity, and any other clinical personnel responsible for the patient’s care.

Critical Results Reporting Standards

According to the “[National Patient Safety Goals](#)” set by The Joint Commission, timely reporting of critical results need to be made to the responsible licensed caregiver(s) within an established time frame so that the patient can be promptly treated.

They outline three Elements of Performance to achieve this goal:

1. Collaborate with organization leaders to develop written procedures for managing the critical results of tests and diagnostic procedures that address the following:
 - The definition of critical results of tests and diagnostic procedures.

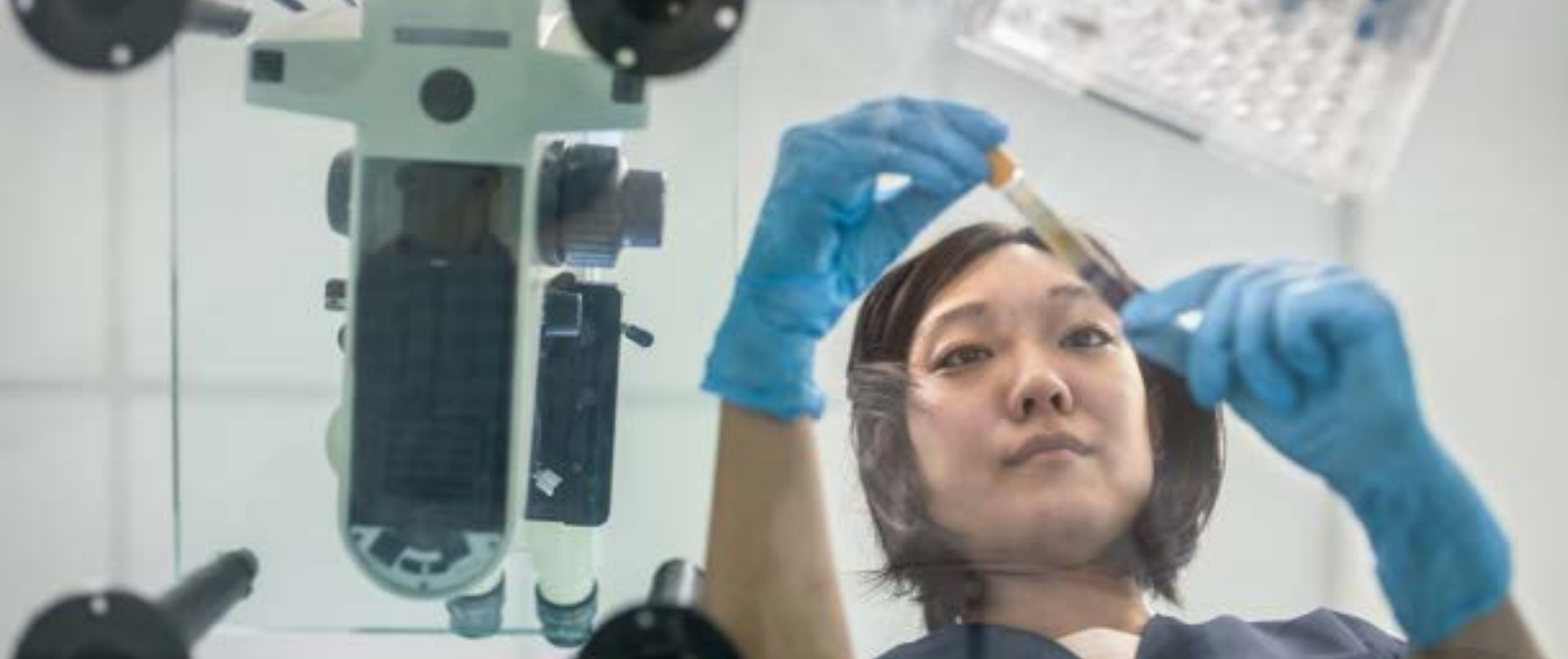
- By whom and to whom critical results of tests and diagnostic procedures are reported.
 - The acceptable length of time between the availability and reporting of critical results of tests and diagnostic procedures.
2. Implement the procedures for managing the critical results of tests and diagnostic procedures.
 3. Evaluate the timeliness of reporting the critical results of tests and diagnostic procedures.

Critical Lab Communication

When a critical lab value is verified, oftentimes a phone call is made to report the result and it is documented in the Laboratory Information System. To comply with patient safety goals, the person taking the call must read back (read-back) the patient's name, the hospital number, and all laboratory results. Read-back is required to ensure accurate transmission of information.

Historically, verbal communication has been considered the preferred procedure for notifying critical values. However, the need to quickly and accurately communicate lab diagnostics is paramount for lowering the risk of a patient experiencing an adverse medical event.





An article appearing in the [National Library of Medicine](#) titled, “Critical laboratory values communication: summary recommendations from available guidelines” finds that, “The results of surveys conducted in the UK, Italy, US, China, and Croatia have notably emphasized that there is poor consensus regarding many aspects of critical values management. This is a rather concerning issue, for not less than three good reasons. First, the lack or delayed communication of critical values has been clearly recognized as a source of significant harm to the patients, since these test results may lead to treatment modification in as many as 98% of patients admitted to surgical wards and up to 91% of those admitted to medical departments. Then, critical values communication is an integral part of many accreditation procedures for medical laboratories, including the universally agreed International Organization for Standardization (ISO). Finally, timely notification of critical values has been endorsed as one of the leading quality indicators of the post-analytical phase [of laboratory medicine] by the Working Group “Laboratory Errors and Patient Safety” (WG-LEPS) of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC).”

Information technology tools are becoming an essential component of medical lab communication because they provide:

- Fast and accurate communications.
- Automated systems.
- Reporting.
- Simplified communications.
- HIPAA compliance to protect patient health information.

The Traditional Process of Reporting Critical Values

The College of American Pathologists (CAP) offers a laboratory accreditation program. To attain accreditation through the CAP, they require that at least 90% of critical values be reported within 30 minutes after obtaining a verified result. A similar requirement is in place through The Joint Commission.

Sometimes it is difficult for organizations to attain or retain accreditation because the traditional process to verify and document notifications (read-back) can be time-consuming. Typically, institutions will designate categories of personnel who are authorized to receive critical values – usually physicians and nurses.

If the results are communicated to a suitable medical staff member, the name of that person, time of contact, and documentation of read-back is recorded. If the result is provided to non-medical personnel, that person is required to notify the correct physician and record the notification and read-back in the patient's medical record.





If the non-medical personnel is unsuccessful in contacting an appropriate person for transmission, the next step is often to page the provider. Significant delays can result if there are issues with contacting the provider or using precious time to find out who is on-call.

The Benefits of Using a Secure Messaging App

Secure messaging apps can outperform traditional phone calls by improving timeliness when reporting results. When healthcare organizations change their process of reporting critical values by telephone to using a secure messaging app instead, they can meet or exceed the standards put forth by accrediting agencies, experience increased efficiency by immediately getting the results to the right person, see a reduction in the time it takes to report results, and have a reliable record of the communication because messages are automatically time-stamped when sent, received, and read. Built-in reporting features provide accurate information about the communication process.

A secure mobile messaging app also provides:

- End-to-end message encryption to protect electronic patient health information (ePHI) and ensure all communications are secure and protected.
- Freedom from outdated pagers. Devices can be consolidated through secure messaging apps so that all correspondence can be done from a smartphone, tablet, laptop, smartwatch, or desktop computer.

- Ease of use.
- Customization.
- The ability to send massive amounts of data quickly and accurately while keeping users firmly connected through WiFi and cellular networks.
- Voice-to-text modes so users can speak a message into their device and it automatically converts into text.
- Persistent alert settings ensure important messages won't be missed.
- A message log to keep track of messaging histories.
- Interoperability by having the ability to seamlessly integrate with on-call scheduling.
- Safety features such as biometric access and remote disabling if a device is lost or stolen.

Notification of critical lab results is a crucial function of the clinical laboratory. Using technology such as secure messaging ensures information is received by the correct personnel, quickly and accurately, to help improve patient care.



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