

Public Health Electronic Test Orders and Results (ETOR) Initiative



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Rapid and timely data exchange of laboratory test information is essential for patient care. State and local public health laboratories (PHLs) provide critical testing for healthcare facilities, such as hospitals, urgent care clinics, community centers, and physician offices. However, PHLs often have manual or outdated systems for receiving test orders and reporting results. CDC has embarked on a national initiative to modernize the data systems used by PHLs to facilitate the exchange of electronic test orders and results (ETOR). Enabling this advanced data exchange is critical for enhancing patient care and supporting public health reporting by healthcare facilities.

According to an unpublished landscape analysis conducted by the Association of Public Health Laboratories, PHLs have implemented solutions for improving data exchange with healthcare partners (figure 1). Some have used web-portals, which require partner facilities to log onto a system separate from their patient management system to place test orders and obtain test results¹. Others PHLs have integrated their laboratory information management system (LIMS) directly with the data systems used by a healthcare facility, such as an electronic health record (EHR), electronic medical record (EMR), or laboratory information system (LIS). However, few public health laboratories have implemented a robust ETOR solution that includes the electronic exchange of test orders and results with multiple healthcare partners.

CDC directly supports PHLs with technical assistance and funding to establish web-portals and point-to-point ETOR solutions². As part of the national public health data modernization initiative, CDC aims to accelerate ETOR implementation by building a technical architecture that uses a centralized platform for receiving test orders in different formats from many healthcare facilities and routing these to public health laboratories (figure 2). This same infrastructure will be used to return test results back to providers quickly and seamlessly. This platform could also facilitate the reporting of test results to public health when necessary. CDC intends to collaborate with multiple partners and other federal programs, such as the Office of the National Coordinator (ONC), to enable ETOR between all public health laboratories and the healthcare facilities in their jurisdictions.

Figure 1



Figure 2



The urgent need for improved interoperability between PHLs and healthcare facilities has been highlighted by the COVID-19 pandemic emergency response, during which the existing manual processes for receiving test orders, accessioning specimens, and reporting test results proved insufficient for the needs of both providers and public health³. In the same way that implementing electronic interoperability from EHRs, LIMS, and other patient care systems to in-house and commercial laboratories has significantly improved the timely flow of orders and results between systems⁴, this new centralized ETOR architecture promises enhancements in patient care through:

- Improved provider ordering, including reduction of duplicate data entry
- Reduced risk of errors during manual entry of orders and results
- Increased speed to receive results
- Enhanced integration of discrete result data to the patient chart
- Strengthened public health reporting

Achieving ETOR with PHLs will build on existing laboratory interoperability standards and apply technical and programmatic lessons learned from other public health initiatives, including [electronic case reporting \(eCR\)](#). From these foundations, CDC will work with both PHLs and healthcare facilities to implement ETOR, investing in both the technical infrastructure necessary to exchange orders and results, as well as standards, policies, and the organizational and workflow updates required to integrate ETOR into day-to-day activities of providers and patients.

Together, we can harness ETOR to modernize PHL systems, reduce provider burden, and improve patient outcomes. Want to learn more? Reach out to us at DLS_Informatics@cdc.gov.

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of Centers for Disease Control and Prevention.

References

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