

The Basics of Laboratory Developed Tests

What is an LDT?

Laboratory Developed Tests (LDTs) are tests that hospital, academic, and clinical laboratories develop as testing services. These types of tests are not commercially manufactured and marketed, but rather are high complexity tests designed, developed, performed, and interpreted by board-certified professionals in a single laboratory facility. LDTs are often created in response to unmet clinical needs and are most often used for early and precise diagnosis, monitoring and guidance of patient treatment. Unlike LDTs, in vitro diagnostic (IVD) test kits are “boxed and shipped” products manufactured by industry to be used by laboratories throughout the country.

In many cases, LDTs represent the standard of care. Precision medicine relies on the ability of these laboratory professionals to create diagnostic testing procedures in the specific clinical context of the patient, and to improve those procedures as new scientific and medical knowledge emerges. Examples of LDTs include tests that:

- Confirm infection by the Zika virus
- Provide tumor profiling to optimize treatment plans (*e.g.*, multiple genes in lung cancer)
- Determine the risk of hereditary cancers (*e.g.*, BRCA)
- Identify carrier status (*e.g.*, Tay Sachs disease, Cystic Fibrosis, etc.)
- Use specimen types for which there is no FDA-approved test (*e.g.*, those collected using minimally invasive procedures)
- Diagnose and treat patients with rare diseases

Patients rely on LDTs to diagnose their condition, establish risk of developing a disease, inform an appropriate treatment plan, predict response to a specific drug, and to provide a prognosis of likely disease progression. LDTs are important tools that support medical decision making and are central to public health. Additionally, because LDTs can be developed quickly and modified to fit the unique needs of patients, they are the transformative tools that shape medical practice in the future.

How are LDTs regulated?

The vast majority of clinical diagnostic tests are offered as LDTs. Until this century, FDA has not claimed authority over these procedures but on the manufactured instruments, kits and reagents, which it regulates using medical device regulations for 510(k) clearance or premarket approval (PMA). (“Implantables,” such as pacemakers, are also medical devices.) Instead, clinical laboratories and the LDTs developed and performed by their personnel are regulated by the Centers for Medicare and Medicaid Services (CMS) under the Clinical Laboratory Improvement Amendments of 1988 (CLIA), in addition to state level requirements and professional accreditation bodies. In 2014, FDA announced its intention to begin regulating all LDTs as medical devices.

What are the potential implications of changing the regulatory framework?

Imposing an entirely new regulatory regime on healthcare providers, the healthcare system, and patients will deplete limited resources needed to strengthen existing requirements and inevitably constrict access to essential testing services as many public health, community, and academic laboratories would find switching to a new regime cost-prohibitive. In addition, approaches that do not account for the particular needs of the public health laboratories and the network of sentinel laboratories, which provide detection on the frontline of clinical care, endanger communities, regions, and ultimately the health of the nation. Equally concerning, a new regime would unnecessarily constrict the number of new tests providers are able to develop and offer patients, directly impacting access to breakthrough treatments and medical innovation. In short, legislative and regulatory proposals that shoehorn clinical laboratories into an entirely new regulatory agency and set of requirements will interject tremendous instability and unpredictability that will harm access and innovation.

What is a better alternative?

We support modernizing the oversight framework for high complexity clinical laboratory developed testing services and procedures primarily through reform of the Clinical Laboratory Improvement Amendments (CLIA). We urge Congress to pursue modernization of the CLIA oversight framework targeted on high complexity laboratory developed testing services and that would establish standards for clinical validity and strengthen established standards related to: (1) quality control; (2) quality assurance; (3) personnel standards; and (4) regular proficiency testing. Expanding the existing CLIA oversight framework for high complexity laboratory testing services will assure patient safety and provide a stronger structure to prevent laboratory errors while at the same time preserve patient access to care. Specifically, in light of the extraordinary progress in diagnostic medicine, including large-scale genetic sequencing and the application of information technology, the existing CLIA requirements should be enhanced to ensure the quality of high complexity testing services and procedures based on risk.

Updating CLIA requirements will achieve a flexible system that fosters innovation and promotes emerging medical knowledge. It is also the most streamlined and cost-effective approach (for the federal government and the health care system) and the least disruptive and burdensome approach (for the laboratory community and the patients they serve) to addressing clinical and analytical validity, transparency, and other concerns expressed by interested stakeholders.