



Transformed into Smart Technological Labs Providing Massive Customer Service for Future Lab

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DESCRIPTION

In the world of current technology, the health-care delivery system comprises many such diverse individuals and specialties that the caretaker must have a working knowledge of other professional pursuits, such as diagnostic evaluation. In essence, laboratory and diagnostic tests are tools, not cures. These tests can confirm a diagnosis or give vital information about a patient's health and response to therapy when used in conjunction with a thorough medical history and physical examination. Laboratory results, in addition to these, are critical for epidemiological surveillance and research. The speed of medical research innovation is quickening, but are labs prepared to keep up? Maybe not! The need of the hour is to digitally empower labs and employ cutting-edge research to transform them into globally networked powerhouses capable of breaking new ground at scale. Digital Transformation in the Lab, a study by Accenture, demonstrated how life sciences organizations are using digital in their research and development and quality control labs. According to the survey, 60% of businesses are using digital technologies 37% are piloting, 13% are scaling up, and 10% have digital technology in general usage.

Impact of future labs: The modern lab will revolutionize how testing are conducted and biopharmaceutical drugs are developed. Those laboratories will offer the most cutting-edge breakthroughs, innovative concepts, and technologies to doctors and patients, with an emphasis on validation, knowledge management, new assay creation, contract research, new technology evaluation, and R&D services in the field of Genomics and Proteomics. In R&D, it will routinely and totally automate heretofore inaccessible, miniaturized, and complicated experiments. Furthermore, the utilization of extended reality to assure tech transfer, train, and provide technical assistance on new ways will become routine in terms of quality control.

Future laboratories are an unavoidable necessity: If we want to build a digital diagnostic network that enables the connected world and empowers global health through meaningful break through, however lab transformation unavoid.

As technology continues to transform how we live and work, and demand for a modern, quality-driven digital approach to laboratory operations that provides consumers with unprecedented convenience, meaningful innovations, and reliability is growing. At-home diagnostics, which would allow phlebotomists to conduct tests and transmit results instantaneously, is the way of the future. The goal is to enable a new era of medicine in which procedures can be carried out in people's homes and a diagnostic continuum can support a fully linked, accessible, and ubiquitous vision of health.

We envision a cutting-edge, harmonized clinical diagnostics system that enables testing for immunoassay, serology, clinical chemistry, point-of-care, clinical microbiology, clinical microscopy, hematology, cytopathology, transfusion, and molecular diagnostics. Through speed, quality, efficiency, and scalability, a series of innovations are poised to revolutionize the industry's testing paradigm and assist lead patient care. The healthcare system is rapidly realizing the value laboratories can provide by becoming more of a clinical decision engine, assisting patients in performing tests at home and physicians in effectively diagnosing and monitoring patients.

Prolonged advancement: Technological innovations have indeed rendered POCT equipment increasingly transportable, and they've also enhanced specimen collection processes to ensure that they cause the least amount of disruption. The advancements in disposable test cartridges and microprocessor-based analyzers have contributed to this technology's generally user-friendly character. Another expanding area that is changing the way laboratories operate is home testing. Test findings are typically submitted manually by patients or entered into shared data-monitoring systems, making it decentralized. These over-the-counter diagnostics and home testing kits are reasonably priced.

Future laboratories are on their way to allowing patients to take a more active role in their own care by incorporating at-home rapid testing into their medical regimen. Patients will be able to contribute vital information to their medical records via digitally linked hand-held devices meant for home use, which should come as no surprise. In light of the expanding number of

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endemics and difficult testing, future labs will face stiff competition from advanced hospital and independent laboratories. Medical centers are enduring a tech breakthrough that aims to improve efficiency, quality, and reduce errors in health-care delivery. Many laboratory operations will be automated, resulting in major changes in the requirements for laboratory workers. Experts to monitor and service robotic technology, as well as competent IT professionals and associated health professionals, are expected to be in high demand.

Start-ups in the field of health technology: In India, there is a growing need for high-quality, low-cost healthcare, and the fast expanding healthcare market is offering enormous potential for health tech firms and start-ups. As a result, wider trends are

forming in areas such as preventative healthcare, pathology, analytics, testing facilities, and emergency services, to name a few. Health tech start-ups are doing amazing things, from offering instant support from doctors over the phone to integrating Artificial Intelligence into healthcare and generating low-cost tailored healthcare.

Summarizing everything: In this new era, initiatives for reforming diagnostic laboratory tests must include strategies for delivering fast and high-quality tests, enabling home tests, and reducing superfluous and non-contributory testing. These developments will help us to develop illness prevention and early detection measures. The goal is to make progress toward improving population health in a sustainable and cost-effective manner.