

# How **transplant testing** impacts clinical productivity



## **Collaborating to improve workflow, enable expedited care decisions, and ensure adherence**

The transplant testing process is complex and extensive, involving frequent monthly testing from the time a transplant is needed to ongoing post-transplant monitoring.<sup>1</sup> This process may become increasingly challenging for all involved—health systems, transplant centers, clinicians, and patients—as the number of transplants occurring in the US continues to climb—2021 saw a record number of kidney, liver, and heart transplants.<sup>2</sup>

Adding to this growth is another rising number—that of younger patients receiving transplants, meaning more years of post-transplant monitoring and testing. In addition to an expanding need, patients themselves can further complicate the testing process through noncompliance, due to lack of testing access and convenience, among other reasons.

All of this is happening as hospital laboratory staff are working at maximum capacity and experiencing

burnout, a result of the pandemic and its ongoing and potentially lasting ramifications.

One way for hospitals, health systems, and transplant centers to address these transplant-related challenges is to streamline the transplant testing process so that it better aligns with clinical workflow. In the Pediatric Transplant Center at the Children's Hospital of Philadelphia, for example, collaborative efforts to improve the efficiency and effectiveness of care—including a streamlined transplant evaluation process—enabled the center to prevent surgical procedures, reduce the risks of infection, and optimize transplant function.<sup>3</sup>

Collaborating with a reliable laboratory services provider that offers an end-to-end solution can help health systems and transplant centers streamline and improve the transplant testing process for better outcomes.

## Improving workflow for better care

When it comes to transplant testing, timing is everything. That's why it's essential for clinicians to be able to easily access all the tests their patients need when they need them—and get timely results.

Working with a lab services provider that offers extensive LIS/EMR connectivity is a good place to start. This integration improves the testing process by enabling simple electronic ordering, identifying missing information to ensure the right test is ordered, and providing specimen requirements along with easy-to-understand patient instructions.

Working with a lab services provider that offers extensive LIS/EMR connectivity can simplify and enhance the transplant testing process.

In 2020, the Yale New Haven Health system in Connecticut demonstrated how EHR technology can improve the organ donation process.<sup>4</sup> For years, this process has required clinicians at individual hospitals to call their designated organ procurement organization (OPO) to initiate a medical screen for potential donors. Each call lasts about 15 minutes, but collectively these calls take up a massive amount of time; clinicians at a large health system, for example, can make up to 5,000 referral phone calls each year.<sup>4</sup>

Through its EHR, Yale New Haven Health replaced these phone calls with computer-generated messages for 8 weeks in 2020 at 1 of its hospitals. By automating the process, the tool saved the health system 470 hours of nurses' time that year. Yale New Haven Health then rolled it out to its 4 other hospitals, and since then, 2 other major health systems in New England have adopted it in 6 hospitals.<sup>4</sup>



A lab services provider can also offer solutions—like lab stewardship technology—that enable ordering clinicians to adhere to medical guidelines and system protocols to improve the efficiency of testing. For instance, 1 study examined whether a diagnostic stewardship intervention—also referred to as a computerized clinical decision support-based intervention—could reduce testing among recent solid organ transplant recipients.

*C. difficile* infection (CDI) is a frequent complication for these patients, but overdiagnosis of CDI is common in hospitals that use nucleic acid amplification testing (NAAT), potentially leading to unnecessary interventions and costs.<sup>5</sup> With diagnostic stewardship technology, there was a 33% reduction in tests and fewer CDI events, indicating that lab stewardship may help reduce unnecessary testing,<sup>5</sup> for better patient outcomes.

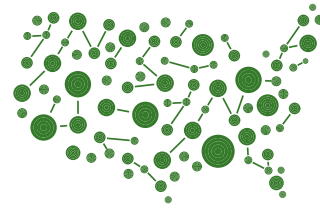
Beyond the EMR, health systems can further enhance the transplant testing process by working with a lab customer solution team that provides proactive tracking and monitoring of specimens (eg, via FedEx). This can save time and instill confidence that the specimen will reach the lab quickly and safely.

## Enabling expedited clinical-care decisions

Throughout the transplant journey, test results may be needed quickly. For example, when solid organ transplant patients face complications, clinicians need accurate and timely results that allow them to monitor:

- Infection
- Immune system function
- Drug levels
- Rejection

A seamless, end-to-end transplant testing solution—provided by a single lab services provider—can help health systems and transplant centers ensure their clinicians have access to the results they need as soon as possible. Collaborating with a lab services provider that has a nationwide footprint is 1 way to do this, offering testing support for any transplant patient in the country.



Collaborating with a lab services provider that has a nationwide footprint enables testing support for any transplant patient in the country.

In addition to enabling timely results, the right lab services provider can collaborate with clinicians, offering test selection and results interpretation support to help inform and expedite clinical-care decisions. Longitudinal patient data are another benefit of an independent lab services provider, and this information can be used to guide clinical-care decisions and aid in long-term post-transplant monitoring.





## Ensuring testing adherence

For the transplant testing process to run smoothly, both recipients and donors must comply with testing requirements. Noncompliance, or failing to comply with doctors' instructions, can have a series of negative consequences, from delaying the transplant process to post-transplant rejection.

For example, in heart transplant patients, appointment noncompliance is a critical behavioral risk factor in the occurrence of late acute rejection episodes.<sup>6</sup> Unfortunately, for post-transplant patients, overall noncompliance rates vary from 20% to 50%.<sup>7</sup>

In a retrospective review of 260 kidney transplant recipients, 91% who were noncompliant with medications and follow-up care either lost their grafts or died.<sup>8</sup> While there are a number of reasons for noncompliance, one reason may be a lack of convenient access to testing.

Taking steps to increase adherence, including simplifying medical regimens, may increase compliance.<sup>8</sup> An end-to-end transplant testing solution can support compliance by making testing more accessible and convenient for patients and donors.

If patients can provide specimens in their physician's office, for instance, or at service centers with convenient locations across the country, compliance may improve—especially over a longer time frame—because patients can have their samples drawn on



their own schedules and in locations close to home, regardless of physician location.

Another hindrance to compliance may be the cost of transplant testing, so a lab that offers billing flexibility and/or broad health plan coverage may also help improve testing adherence. Enabling patients to get the testing they need when they need it not only can yield better patient outcomes but also can improve clinical workflow, as staff can spend less time following up with patients to ensure testing adherence.

An end-to-end transplant testing solution can support compliance by making testing more accessible and convenient for patients and donors.

## Improving the transplant testing process for better outcomes

As the number of transplant operations in the US continues to increase, it will be imperative for health systems and transplant centers to find ways to further enhance the process in order to address the needs of an overextended staff and improve care overall.

OPOs, clinicians, and transplant recipients notice improved outcomes when they work with lab

services providers that offer specialized transplant testing solutions.<sup>9</sup> A comprehensive, end-to-end transplant testing solution that's aligned with clinical workflow can help ensure the delivery of timely test results, enable expedited clinical-care decisions, and support testing adherence. As a result, health systems, clinicians, and patients can achieve better outcomes across the transplant journey.

### References

1. Quest Diagnostics. Data on file. 2020. Based on the number of individual tests run and frequency of testing heard for a typical patient.
2. Masson G. US sees record number of organ transplants in 2021. *Becker's Hospital Review*. Published February 17, 2022. Accessed September 8, 2022. <https://www.beckershospitalreview.com/patient-safety-outcomes/us-sees-record-number-of-organ-transplants-in-2021.html#>
3. Children's Hospital of Philadelphia. New transplant center initiatives improve efficiency, effectiveness and the patient experience. Published July 17, 2020. Accessed June 28, 2022. <https://www.chop.edu/news/new-transplant-center-initiatives-improve-efficiency-effectiveness-and-patient-experience>
4. Glazier AK, Moss M, Martin LA. Electronic health records can improve the organ donation process. *Harvard Business Review*. Published December 13, 2021. Accessed June 28, 2022. <https://hbr.org/2021/12/electronic-health-records-can-improve-the-organ-donation-process>
5. Madden GR, Sifri CD. Reduced *Clostridioides difficile* tests among solid organ transplant recipients through a diagnostic stewardship bundled intervention. *Ann Transplant*. 2019;24:304-311. doi:10.12659/AOT.915168
6. De Geest S, Dobbels F, Martin S, et al. Clinical risk associated with appointment noncompliance in heart transplant recipients. *Prog Transplant*. 2000;10(3):162-168. <https://doi.org/10.1177/152692480001000306>
7. Laederach-Hofmann K, Bunzel B. Noncompliance in organ transplant recipients: a literature review. *Gen Hosp Psychiatry*. 2000;22(6):412-424. doi:10.1016/S0163-8343(00)00098-0
8. Schweizer RT, Rovelli M, Palmeri D, et al. Noncompliance in organ transplant recipients. *Transplantation*. 1990;49(2):374-377. doi:10.1097/00007890-199002000-00029
9. Future of Personal Health. The critical role of laboratory testing in transplantation. Published January 9, 2020. Accessed June 28, 2022. <https://www.futureofpersonalhealth.com/transplants/the-critical-role-of-laboratory-testing-in-transplantation/#>

### QuestDiagnostics.com

Quest, Quest Diagnostics, any associated logos, and all associated Quest Diagnostics registered or unregistered trademarks are the property of Quest Diagnostics. All third-party marks—® and ™—are the property of their respective owners. ©2022 Quest Diagnostics Incorporated. All rights reserved. WP11423 9/2022