Laboratory data is helping reduce mortality rates and increase longevity as part of a growing number of patient-centric initiatives focused on new approaches that identify illnesses earlier. Increasingly, such projects leverage expertise and data from the clinical laboratory to not only improve interventions but also measure results, enhancing patient care and saving lives.

A number of interdisciplinary teams taking this approach have been recognized with distinction or achievement by AACC, Abbott, and other leading healthcare organizations through the UNIVANTS of Healthcare Excellence program. From identifying people with familial hypercholesterolemia to improving treatment of hepatitis C (HCV) and hepatitis B (HBV) to increasing blood donations, the initiatives profiled below have achieved measurable, innovative impact within their healthcare systems.

Reducing Mortality Through Early Identification of FH

While individuals with familial hypercholesterolemia (FH) have high premature mortality rates, they often go undiagnosed. On average, untreated patients can lose up to 21 years of life. SYNLAB, the largest laboratory in Europe, and AMGEN, a biotechnology company, joined forces in spring of 2018 to implement an FH alert to automatically notify physicians when additional testing might be needed, particularly if cholesterol levels exceeded thresholds in patients up to 60 years old.

FH is a genetic disorder caused by a defect on chromosome 19. This defect makes the body unable to remove low density lipoprotein (LDL) cholesterol from the blood, which results in high LDL levels. Experts estimate that without treatment, a man with FH has a 50% chance of having a myocardial infarction (MI) by age 50 and a woman has a 30% chance by age 60. Because FH is not linked to diet or weight, the condition is often undiagnosed until there is a cardiac event.

Aiming to improve FH diagnosis, SYNLAB Germany initiated the FH alert in March 2018 in the Upper Palatinate, one of the administrative districts of Bavaria. Working with its information technology department, the lab created an automatic alert so that every patient undergoing lipid testing would automatically be flagged for further testing if they had high LDL levels. The goal of the initiative was to identify high-risk patients with undetected FH who would benefit from therapeutic treatment.

Primary care physicians who sent specimens to SYNLAB were alerted to the new process. If they received an alert about a patient, they were instructed to go to a website to calculate the probability that their patient had FH and could then order a test.
“The laboratory is now taking a more active role in the diagnostic process. We really have become part of the team. There may be many further applications where the lab can get involved and make a real difference.”

—WINFRIED MÄRZ
Increasing Blood Donations in Dubai

The Dubai Health Authority (DHA) recognizes the importance of having blood and blood products for life-saving efforts of patients undergoing transfusion. Achieving 36,000 donations in 2015 was excellent but still short of demands. The Dubai Blood Donation Center, which provides blood to four governmental and 30 private hospitals in Dubai, recognized an opportunity to increase population engagement, particularly among donors ages of 17 to 25.

In 2016, an integrated care team implemented a media strategy, “BE THE ONE,” to attract new blood donors, especially from the younger population. The campaign included marketing messages displayed on all DHA buildings, cars, and buses, as well as special supplements within newspapers. The blood donation center also encouraged universities and schools to help spread the word and developed a mobile app for both Apple and Android mobile devices. The Dammi blood donation app educates potential donors about blood donation and allows them to register through the app to donate blood.

In the 12 months following implementation of the campaign, the DHA experienced a 37% increase in donations of all blood products (whole blood, plasma, red blood cells, and platelets) over the previous year. Almost 10% of the donations came from people age 18 to 21, which increased the total number of potential donations per person across the donor population. The availability of rare blood types, such as O negative, increased by 2.8%. The numbers continued to increase in subsequent years. In 2017, the Dubai Blood Donation Center received almost 65,000 blood donations, and in 2018 it received about 64,000 donations.

“Through this campaign we have achieved a positive influence on the young generation to be regular, voluntary blood donors, which is the basis for a sustainable and safe national blood program,” said May Raouf, MD, medical director of the Dubai Blood Donation Center.

At one hospital in Dubai, which operates the largest Thalassemia center in the country, the increase in donations reduced the hospital’s gap in supply by 8.9%, allowing it to meet requests for blood 99.2% of the time.

An added benefit of the increase in blood donations is that a small percentage of new donors were diagnosed with undetected infectious diseases, which enabled early treatment and reduced the likelihood of transmission.

“When screening blood donors for infectious diseases, those with positive test results receive medical counseling to prevent the spread of the infectious disease to their family members and the community,” explained Raouf. “Proper guidance for disease management is offered by our medical counseling team. Earlier detection of infectious diseases enables better clinical outcomes and reduces the risk of infectious diseases spread in the community.”

The extraordinary results achieved by the DHA were recognized with achievement by the 2019 UNIVANTS of Healthcare Excellence program. The DHA program is considered highly scalable and could be expanded to other countries, according to Raouf. In 2017 the Dubai government recognized the project with the Sheikh Hamdan Smart Government Award as one of the eight best “smart initiatives.”

Working Across Disciplines to Make a Difference

Each of these initiatives demonstrates how clinical laboratories can leverage their unique insights and capabilities to empower larger teams that improve patient care and outcomes. Beyond simply providing test results, clinical laborato-

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Kimberly Scott is a freelance writer who lives in Lewes, Delaware. 

EMAIL: kmscott2@verizon.net
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