

CLN - Special Supplement

Improving access, equity, and outcomes through multidisciplinary collaboration



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At a time when scholars and practitioners alike place increased emphasis on access and equity in healthcare, interdisciplinary healthcare teams worldwide are sparking new collaborations to ensure that all people receive the care they need. The initiatives highlighted below, which have been recognized by the UNIVANTS of Healthcare Excellence program, also underscore how clinical laboratories can lead in improving access, equity and outcomes.

Three interdisciplinary teams have been recognized by the Association for Diagnostics & Laboratory Medicine (ADLM, formerly AACC), Abbott, and other leading healthcare organizations as “2024 Teams of Distinction” through the UNIVANTS of Healthcare Excellence Program.

The prestigious UNIVANTS global award program was developed to recognize teams who UNITE across disciplines to achieve common goals and who challenge traditional thought with AVANT-GARDE problem-solving and novel use of laboratory data. All to achieve better outcomes for patients, clinicians, payers, and entire health systems. From eliminating racial disparities in maternal drug screening to improving patient outcomes through C-peptide testing to improving access to health services during war in Ukraine, these initiatives demonstrate how integrated teams can leverage their ingenuity and unique data to profoundly elevate healthcare.

Eliminating racial disparities in maternal drug screening

Drug use during pregnancy can have implications for maternal and fetal morbidity and legal ramifications for patients. The American College of Obstetricians and Gynecologists (ACOG) recommends that drug screening policies during pregnancy should be applied equally to all people and notes that biological screening is not necessary, and verbal screening is adequate.

Despite this guidance, institutions do not consistently implement urine drug screening policies that reduce biased testing and mitigate legal risks to patients. The data show that providers frequently use a positive history of isolated cannabis use (ICU) based on verbal as an indication for UDS, according to Vahid Azimi, MD, a clinical pathologist and informatician in the Department of Pathology and Immunology at the Washington University School of Medicine in St. Louis, MO.

In many hospitals, Black mothers during the peripartum period are disproportionately subjected to urine drug screenings (UDS) compared to their White counterparts. Black women also are more frequently reported to Child Protective Services (CPS), even though studies have not demonstrated a connection between prenatal ICU and other substance misuse.

A study conducted at Washington University’s Barnes-Jewish hospital showed that, in line with previously published data, Black patients presenting to the hospital for delivery in Missouri were significantly more likely to undergo urine drug screening compared to White patients.

Continued on next page

The goal of urine drug screening is to identify patients who may benefit from further support or clinical care, but there is also a serious potential downside, noted Azimi.

“Missouri is a mandatory reporting state, meaning that any positive result on a drug screen must be reported to child protective services,” Azimi explained. “This practice has potentially damaging consequences for the patient and the baby, including fracturing of the trusting a therapeutic patient/provider relationship and the potential separation of the patient and baby directly after birth. Thus, it is important to balance the potential benefits and harms of urine drug screening in the peripartum setting.”

This problem is particularly pernicious in states like Missouri, where Black women face a maternal mortality rate that is three times higher within the first year after pregnancy than that of White women.

The study showed that much of the disparity in urine drug screening was driven by Black patients being selected for testing based on “a history of isolated cannabis use,” which was thought to be a risk factor for more clinically significant drug use (i.e., opiates and opioids), although the data showed that only 1% of patients tested for this indication had a non-cannabis drug identified.

“Thus, Black patients were being subjected to testing that was more likely to expose them to harm (CPS reporting and its consequences) than any possible benefit as there is no clinical intervention for patients who only test positive for cannabis,” said Azimi.

Taking aim at these disparities, a multidisciplinary team at Barnes-Jewish Hospital led an initiative to remove ICU as a UDS indication for peripartum mothers in the hospital. Clinicians now must answer an electronic order question that requires them to select from a list of pre-approved indications that does not include “isolated cannabis use” when ordering UDS.

The pathology informatics department made changes in the electronic medical record that restricted ordering to approved indications. They also developed methods for auditing and analysis of the intervention. “While there were many potential strategies to try to stop testing for cannabis, including removing cannabis from the UDS testing panel, the clinical laboratory’s knowledge of laboratory workflows and pathology informatics allowed us to determine that clinical decision support was the most feasible and practical option,” said Azimi.

The initiative, which went live in October 2022, successfully eliminated the disparity between Black and White mothers, and it led to a 75% decrease in the number of deliveries where UDS was performed, according to Azimi. Pre-intervention, 22% of deliveries for Black mothers had UDS versus 10% for White mothers. Post-intervention, 5% of deliveries for Black mothers and 4% for White mothers had UDS. In addition, the CPS reporting rate decreased by 66% for Black mothers and 50% for White mothers.

The initiative has had benefits for both patients and clinicians. According to Brigit Johnson, a clinical social worker with the hospital, the invasive nature of a UDS without informed consent and the CPS investigation was traumatic and harmful to the new family.

“With this accusation of child abuse and breakdown in trust, maternal care was compromised as birthing people did not feel they had a trusting environment to raise concerns. The focus on care had been placed on what was judged as negative behaviors of the patient,” she said. “Due to changes in UDS policy, the medical team can focus on the physical and emotional needs of the mom and baby, improving outcomes and provider relationships.”

The initiative also saves costs. Prior to the intervention, there were 0.16 urine drug screens performed per delivery compared to 0.04 performed after the initiative began, representing a 75% overall decrease in testing. Given an average of about 3,500 deliveries per year at the hospital, this equates to approximately 400 fewer drug screens performed per year. At an estimated billed cost of \$500, 400 fewer tests per year represents annual cost savings of about \$200,000, explained Azimi.

“This estimate was based only on the cost savings attributable to the cost of the test itself and did not include technical and medical director’s time to perform, review and sign off on the results,” he said. “Additionally, this figure does not capture the time spent by physicians, nurses, clinical social workers and CPS in responding to these results and referrals. The actual realized cost savings is likely higher.”

Using C-Peptide testing to accurately classify patients with diabetes

Diagnosis of type 1 diabetes remains challenging, and the clinical criteria currently used is not perfect. Since different types of diabetes (type 1, type 2, prediabetes and gestational diabetes) require distinctive treatment plans, being misdiagnosed with the incorrect type of diabetes can lead to an inappropriate course of treatment. For instance, a person misdiagnosed with type 1 diabetes might be prescribed insulin unnecessarily, leading to prolonged and harmful consequences for their health.

University Hospital of Wales in the United Kingdom developed a new strategy to tackle this problem by re-evaluating patients with type 1 diabetes using a different marker, C-peptide.

C-peptide serves as a crucial biomarker for assessing insulin production, offering valuable insight into whether a patient might not have type 1 diabetes. Elevated levels of C-peptide suggest that the body is still producing some insulin, which could indicate that the patient may benefit from adjusting or even discontinuing insulin therapy.

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The plan was to leverage C-peptide in order reclassify patients' type of diabetes and get patients off insulin who didn't need it. Under the initiative, which began in April 2022, the hospital reevaluated patients with a C-peptide of more than 200 pmol/L using a diagnostic algorithm to potentially reclassify them to type 1 diabetes/monogenic diabetes.

Between April 2022 and June 2023, the hospital reevaluated 324 patients, each with a type 1 diabetes diagnosis for at least three years, revealing surprising findings. Through additional testing, 49 patients (15%) were found to have C-peptide levels exceeding 200 pmol/L, indicating residual insulin production. Of these, 38 patients were reclassified as having type 2 diabetes, with the majority showing C-peptide levels above 600 pmol/L.

Remarkably, 17 of the reclassified patients were able to discontinue insulin therapy entirely by incorporating co-therapies. The hospital found that these patients' health improved significantly, including an average HbA1c reduction of 10 mmol/mol and a decrease in body mass index by 6 kg/m².

"Insulin cessation has improved patients' quality of life as they do not require regular monitoring or injections and reduced risk of hypoglycemia," explained Dr. Arshiya Tabasum, a consultant in the department of diabetes and endocrinology, noting that getting the diagnosis right using tests like C-peptide, the hospital can make sure patients have the right diagnosis and therefore receive the best treatment.

"Insulin cessation is a huge relief and life changing for patients," she added. "In addition, there is significant improvement in glycemic control and reduction in BMI seen in the off-insulin cohort, along with improved quality of life and better job satisfaction."

Patients taking insulin for type 1 diabetes have an increased risk for weight gain (4.6 kg over five years), and a threefold increase in hypoglycemia. By reducing the prevalence of insulin intake by 11.7%, all potential insulin-associated risks are also lowered, including cardiovascular events, said Tabasum.

Recent advances in diabetes management underscore the importance of accurate diagnosis, added Tabasum. For people with type 2 diabetes, there are new therapeutics that delay or replace insulin therapy.

"Although, a 'blind' insulin start is acceptable in severe presentations, early distinction of type 1 diabetes from type 2 diabetes is required to guide optimal therapy," she explained. "Patients who have been reclassified as type 2 diabetics, with the help of C-peptide testing, now are being treated with oral anti-diabetic medications such as metformin, sulfonylurea, SGLT2 inhibitors and GLP1 agonists, either orally or by weekly injections."

The initiative has saved about £1,602 per year per patient, attributable to insulin cessation and continuous glucose monitoring. Thus, for 17 patients, savings were about £27,234 per year. In addition, there were also savings related to a reduction in hospital admissions.

The initiative required collaboration with the University of Wales Biochemistry Department, said Tabasum, noting that the team worked with a consultant biochemist and senior lab technician to automate serum C-peptide tests.

After success of the project, the University Hospital of Wales created C-peptide testing guidance for adults with diabetes, which was accepted by the Welsh Diabetes and Endocrine Society to be implemented at all hospitals in Wales, further expanding patient benefit to a larger population.

Improving access to health services in Ukraine

The war in Ukraine, which began in 2022, has left millions of people without access to essential medical care. More than 10,000 civilians have been killed in the war so far, with millions displaced from destroyed cities and towns, according to the United Nations. And more than 8 million have been internally displaced, according to the International Organization for Migration.

The World Health Organization (WHO) says that climbing costs, logistical hurdles, and damaged infrastructure are making access to essential services even more challenging for growing numbers of civilians. A survey conducted in September 2023 found that one in two respondents reported at least one barrier to accessing any level of care, the most common being cost.

The lack of access to preventive care has also increased the risk of chronic disease, such as diabetes and heart disease, which has led to an increase in preventable deaths. The WHO estimates that there have been an additional 10,000 deaths from heart disease and stroke in Ukraine since Russia's full-scale invasion of the country.

Lviv, Ukraine-based Esculab Medical Laboratory took initiative to eliminate financial barriers to essential medical tests, making them widely accessible to patients from diverse socioeconomic backgrounds. Esculab is one of the three largest private medical laboratories in Ukraine, contracted by the National Health Services of Ukraine. The network includes five labs and 180 sample collection points in the western regions of Ukraine and Kyiv.

Esculab has provided free or reduced cost laboratory to more than 90,000 Ukrainians, including tests for glucose, blood iron, liver function, lipid panels, thyroid-stimulating hormone, and prolactin.

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“Esculab’s social initiatives... have ensured that individuals who may not have been able to afford diagnostic tests in the past can now receive the necessary care for timely and accurate diagnosis,” explained Anna Konyk, chief medical officer of Esculab. “By providing free testing, Esculab’s social initiatives facilitate early detection of diseases, particularly chronic conditions like diabetes, heart disease and thyroid disorders. Early detection enables prompt intervention and treatment, preventing the progression of diseases and improving long-term health outcomes.”

Esculab’s social initiatives are designed to be easy to implement. Based on an analysis of data on healthcare problems in a specific region, Esculab tailors its services to deal with the most pressing needs. For example, in a region with a high risk of diabetes, free glucose tests are offered.

According to a survey conducted by Esculab, 13% of clinics said the number of patients increased when free testing was offered. Almost 90% of clinicians reported that the data from the initiative improved their ability to provide effective care on time, and 97% of patients reported satisfaction with the accessibility of Esculab’s initiative.

Tests offered through the initiative can be purchased through the Esculab website, which reduced customer registration time by 11% during the first 2 months of the initiative. This improved staff productivity and offered streamlined access for patients.

Providing an alternative option for patients to find testing through the laboratory’s website has improved access to care. It has also streamlined the registration process, reducing wait times and delays, according to Esculab.

The initiative offered significant discounts on testing, Honcharenko added, noting that a comprehensive panel of tests for early diagnosis of cardiovascular diseases costs about 40 euros while discounted test panel cost 16 euros.

Patients can save up to 60% through the program. Moreover, detecting cardiovascular diseases early allows for preventative measures, leading to further health outcome and economic benefits.

Esculab also believes that the reduced cost testing initiative can be adapted by additional communities and medical institutions, such as clinics or public health organizations. The initiative also has a strong governance structure, a clear set of policies, and a robust risk management framework in place that identifies, assesses, and mitigates potential risks to Esculab’s patients, staff, and administration.

In addition, the initiative relies heavily on careful analysis of laboratory data. Esculab uses a variety of data sources to track its progress and measure its impact. A team of experts analyzes this data to identify trends and ensure that the initiative is effectively addressing the needs of the communities it serves.

Pioneering healthcare transformation

These initiatives underscore the transformative power of collaboration among clinical laboratories and other medical disciplines in advancing equitable and accessible care. By streamlining electronic ordering systems using a health equity lens, utilizing diagnostic testing to redefine diabetes classifications, and offering affordable testing in conflict zones, these teams are setting new standards in patient care. Furthermore, they demonstrate that evidence-based and cost-effective changes can drive significant improvements in patient outcomes globally.

For more information on the UNIVANTS of Healthcare Excellence award program, visit univantshce.com

Readers are also encouraged to download and read the full supplement as a PDF.

Continued on next page

UNIVANTS 2024 teams recognized in this issue

The UNIVANTS of Healthcare Excellence award program celebrates integrated teams that have demonstrated the profound impact of applying cutting-edge strategies with a patient-centered ethos. These exceptional teams are not just making changes—they are setting new benchmarks in healthcare, showing how multidisciplinary collaboration can lead to significant, measurable improvements in outcomes. By embracing a spirit of innovation and unity, they are redefining what is possible, transforming challenges into opportunities for excellence.

Improving equity in maternal and newborn outcomes by eliminating disparities in maternal drug screening

Washington University School of Medicine, Barnes-Jewish Hospital, and St. Louis Children's Hospital, St. Louis, Missouri, United States

Vahid Azimi, Jeannie Kelly, Lauren Nacke, Noor Riaz, Stephen Roper

Improved patient outcomes facilitated by C-peptide testing, enabling reclassification and therapeutic changes for patients with diabetes

University Hospital of Wales, Cardiff, Wales

Arshiya Tabasum, Carol Evans, Rowan Hellier, Julia Johansson Evans, Colin Dayan

Improving access to health services in vulnerable communities affected by war

Esculab

Lviv, Ukraine

Victoriia Honcharenko, Anna Konyk, Olena Yanchinska, Liudmyla Kostyuk, Iryna Mandzyuk