



# CASE STUDY: UEMEDICAL AND DANAT AL EMARAT WOMEN AND CHILDREN'S HOSPITAL

## SUPPORTING HEALTH SYSTEM GROWTH THROUGH ABBOTT'S INNOVATION

### OVERVIEW

- United Eastern Medical Services (UEMedical) group, Abu Dhabi's leading healthcare development and investment company, owns and operates an integrated health system including its flagship hospital, Danat Al Emarat Hospital for Women & Children, HealthPlus Network of Specialty Centers, HealthPlus Fertility Centers and Moorfields Eye Hospital Abu Dhabi
- Danat Al Emarat Hospital is a 150-bed hospital, expected to grow to 225 beds by 2021, and is supported by a state-of-the-art laboratory which processes 1.8 million tests annually serving all UEMedical's hospitals and clinics in UAE
- This hospital serves as the only private women's and children's hospital in the region including comprehensive Fetal Medicine Unit and one of the largest Neonatal Intensive Care Units (NICU Level III), providing acute care for high-risk pregnancies and pre-term babies

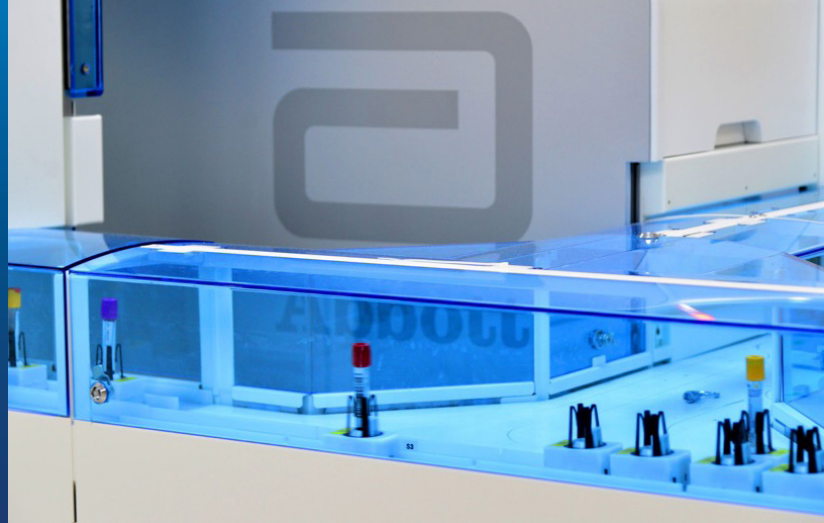
### LABORATORY GOALS

- Adopt innovative technologies to deliver the highest level of service to patients in Abu Dhabi
- Support continued health system growth through investment in agile solutions
- Automate non-value-added activities to redirect lab staff to consult with physicians

### SUCCESS FACTORS

- Adoption of a flexible and scalable solution to support continued growth of the health system
- Introduction of an end-to-end laboratory solution to reduce staff time devoted to manual, non-value-added activities
- Implementation of a compact high throughput solution that optimizes laboratory space

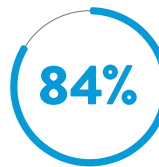
# DELIVERING WORLD CLASS CARE IN ABU DHABI



## SCALING OPERATIONS THROUGH PROCESS AUTOMATION

The United Arab Emirates identified delivery of world class health care as a key national priority as part of the Vision 2021 initiative, which led to significant growth in the healthcare sector over the last decade. This growth has elevated the importance of investing in agile solutions that enable hospitals to quickly adjust to changing demands.

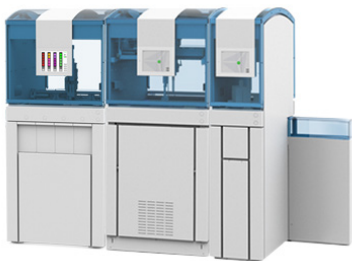
By implementing a scalable laboratory automation solution with Abbott's GLP systems Track and Alinity ci-series, UEMedical and Danat Al Emarat Hospital were able to realize a solution based on existing needs, with the flexibility to grow. This agility is supported by GLP systems Track modular design and the ability to scale provided by Alinity ci-series.



REDUCTION IN  
MANUAL PROCESS TIME

The GLP systems Track automation solution optimized laboratory workflow by removing nine manual steps, reducing laboratory staffs' hands-on time by 84%. Potential error sources were significantly reduced as a result of decreased staff interventions and 80% of surveyed staff strongly agreed that the laboratory had taken measures to diminish the likelihood of errors. Moreover, 70% strongly agreed that the organization took steps to improve quality processes.

ANY COMBINATION OF GLP SYSTEMS TRACK MODULES CAN BE COMBINED, RECONFIGURED, AND SCALED OVER TIME TO MEET EXISTING AND EVOLVING NEEDS OF YOUR LABORATORY



Sample input-output,  
centrifugation, and decapper  
modules



Sample buffering and recapper  
modules



Aliquoting, sample cap remover  
and screw cap modules

## FLEXIBLE AND SCALABLE SOLUTIONS

In the United States, for the GLP systems Track, not all modules and features are commercially available and open connections to clinical analyzers/systems are under development.

## REDUCING STAFF INTERVENTIONS IN THE LABORATORY'S TESTING PROCESSES

The laboratory's testing process required manual intervention from sample reception to final unload. The introduction of GLP systems Track reduced staff interventions by 69% (9 steps). This minimizes the potential for manual errors and has positioned the lab to manage their current growth trajectory.



REDUCTION IN STAFF INTERVENTIONS

### PROCESS STEPS





The organization also recognized that the time required for systems maintenance with the legacy solution was high in non-value-added activity for their technologists. Implementation of the Alinity ci-series decreased manual maintenance activities by 55%, totaling approximately 53 hours annually. Surveyed staff acknowledged this noting a 43% improvement in time spent on maintenance activities versus the legacy solution. Overall maintenance time was also reduced by 26%, providing greater instrument availability.



**55%** REDUCTION IN HANDS-ON MAINTENANCE TIME



**53** HOURS SAVED ANNUALLY ON MANUAL MAINTENANCE



**26%** INCREASE IN INSTRUMENT UPTIME



“Solution uptime was a key consideration for us when we chose Abbott. With the implementation of the Abbott total solution, we have reliable systems with high system uptime, providing process continuity which optimizes our operational productivity. This assures that our physicians receive the critical test results needed so that the right decisions can be made to deliver exceptional care for their patients.”

— Dr Shweta Uppal,  
Chairperson of Laboratory Services, UEMedical

## INCREASING THE EFFICIENCY OF THE LABORATORY SPACE

Forecasted growth requires the organization to be conscientious of using space as efficiently as possible throughout the hospital. Converting to the Alinity ci-series solution reduced the hospital's instrument footprint by 25%, increased tests per square meter by 227% and throughput by 146%. This efficient use of space prepares the lab for the anticipated increase in patient volumes as hospital services expand.



**25%** REDUCTION IN INSTRUMENT FOOTPRINT



**227%** INCREASE IN TESTS PER SQUARE METER



**146%** INCREASE IN THROUGHPUT



“UEMedical and Danat Al Emarat Hospital are committed to providing our patients with the highest levels of service possible. As healthcare and patients' needs evolve, it is critical that we are able to leverage our facilities effectively. By adopting compact analyzers and automation solutions, we were able to achieve greater operational productivity and clinical outcomes in our limited laboratory space, serving all our group's subsidiaries across the UAE, including HealthPlus Network of Specialty Centers, Moorfields Eye Hospital Abu Dhabi and, last but not least, Danat Al Emarat Hospital and Clinics.”

— Eman Al Shorafa,  
Chief Operating Officer, Danat Al Emarat

## LABORATORY RESILIENCE

The organization identified solution uptime as an important KPI to ensure confidence in the laboratory. Abbott's service teams use a three-pronged approach of active sense technologies, resourceful advocates and disciplined processes to drive high system uptime and optimized operational productivity. This approach supported system uptime of 99% across Abbott's total solution.

The novel design of GLP systems Track automation further supported laboratory continuity through its unique self-driving CAR technology versus legacy belt-driven systems that are prone to more disruptive downtime.

**INTELLIGENT, SELF-PROPELLED  
SINGLE SAMPLE CAR**



**SOLUTION UPTIME**



**ACTIVE SENSE  
TECHNOLOGIES**



**RESOURCEFUL  
ADVOCATES**



**DISCIPLINED  
PROCESSES**

In the United States, for the GLP systems Track, not all modules and features are commercially available and open connections to clinical analyzers/systems are under development.



## POSITIVE ORGANIZATIONAL CULTURE

A workplace culture with clear expectations, empowered employees, and clear organization purpose can drive improved employee engagement, and this has been shown to increase productivity by 17%.<sup>1</sup>

The laboratory understood this and invested in a solution to foster a strong engaged culture, empower staff and increase workplace satisfaction. Since adopting Abbott's total solution, 80% of surveyed staff stated that their workplace satisfaction had improved over the last six months. Additionally, 90% of surveyed staff agreed that they realize how their work contributes to the health and treatment of patients, while 80% felt that they have time in their day to focus on more value-added work. Fostering an engaged workplace can lead to 24% less employee turnover.<sup>1</sup> These cultural improvements in the laboratory are expected to support improved productivity and retain high performing personnel.



**80%** OF STAFF HAVE HAD IMPROVED WORKPLACE SATISFACTION IN LAST SIX MONTHS



**90%** OF STAFF CAN SEE HOW THEIR WORK CONTRIBUTES TO THE TREATMENT OF PATIENTS



**80%** OF STAFF AGREE THAT THEY HAVE TIME TO FOCUS ON MORE VALUE-ADDED WORK

<sup>1</sup> Mann, J. (2020, January 01). *The Right Culture: Not Just About Employee Satisfaction*. Retrieved December 07, 2020, from <https://www.gallup.com/workplace/231602/right-culture-not-employee-satisfaction.aspx>

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“UEMedical continues to identify opportunities to extend and provide new services to the UAE community. Some of the most recent examples are the 33-bed extension of NICU facilities at Danat Al Emarat Hospital, the soon-to-open second tower of Danat Al Emarat – doubling the capacity of the hospital – and the opening of new family clinics across Abu Dhabi. To support the group’s strategic expansions, it is critical that we invest in agile solutions. The Abbott total solution allowed us to invest for today, and for the future, with minimal disruption.”

— Dr Sadoon Sami Sadoon, Chief Medical Officer, UEMedical

## CONCLUSION

With the implementation of Abbott’s innovative total solution, UEMedical and Danat Al Emarat Women and Children’s Hospital were able to optimize their laboratory processes and increase operational efficiency. This enhanced solution drove improvements in manual staff actions, process optimization, space utilization, system uptime and staff satisfaction. These advancements will allow the group to deliver exceptional care to its patients while providing the flexibility to scale their capabilities to meet ever-growing demand.



PROCESS  
AUTOMATION



SCALABILITY



EFFICIENT  
SPACE  
UTILIZATION



IMPROVED  
BUSINESS  
CONTINUITY



POSITIVE  
WORKPLACE  
CULTURE

CORELABORATORY.ABBOTT

In the United States, for the GLP systems Track, not all modules and features are commercially available and open connections to clinical analyzers/systems are under development  
GLP systems Track is not approved for use in US blood donor and plasma testing laboratories.

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