


Improving Patient Outcomes Through Strategic Implementation of Procalcitonin into Clinical Care

King Abdulaziz Medical City - Jeddah



UNIVANTS
OF HEALTHCARE EXCELLENCE



L-R: Dr. Anwar Borai, Bilqasem Albarakati, Dr. Fahad Al-Hameed, Ali Bawazeer, Abobaker Yagoot



Efforts to reduce the morbidity and mortality due to sepsis have increased drastically in recent years, with a focus on improving identification and treatment of patients with signs of sepsis, severe sepsis and septic shock, as recommended by the sepsis 6 bundles. Key among these recommendations is early identification to enable rapid and appropriate medical intervention. The King Abdulaziz Medical City, in Jeddah, Saudi Arabia recognized an opportunity to address care gaps in patients with sepsis and severe sepsis through the introduction of novel procalcitonin (PCT) testing into clinical care.

The collaborative efforts of an integrated clinical care team enabled integration of PCT with interpretive algorithms into the ICU leading to a 20% reduction on patient mortality due to sepsis in the ICU. The strong outcomes recorded in the ICU subsequently lead to wider adoption within the emergency department to further enhance and inform patient management.

Dr. Asim Al Saedi, Associate Director Infection Prevention and Control at NGHHA remarks that “by using the PCT test in concordance with other biomarkers, it was easier for us to differentiate between sepsis and non-sepsis patients and give the right treatment accordingly”. It is evident that by utilizing the insights from PCT guided algorithms clinicians had additional diagnostic information to rapidly treat patients, this has resulted in a 1.5-day reduction in length of stay for urgent care patients, and an 11% decrease in readmissions for patients with sepsis in relation to hospital acquired infections.

Further, the expedited identification and treatment of patients with sepsis has resulted in substantial mitigation of healthcare costs. An estimated \$250,000/year are saved attributed to reduced length of stay for urgent care patients (\$168,000), reduced readmissions (\$47,000) and antibiotic stewardship alone (\$35,000).

For their pioneering efforts to introduce PCT into the Western Region of Saudi Arabia and their commitment to improving patient outcomes by solving care gaps, this integrated clinical care team which included innovation across laboratory medicine, ICU physicians, Hospital Administration, and Quality improvement was recognized by the 2021 UNIVANTS of Healthcare Excellence Award program, with recognition of Distinction. Congratulations to Balqasim Barakati, *Quality improvement specialist*, Dr. Anwar Borai, *Clinical Scientist, Section Head, Clinical Biochemistry Associate*, Prof. King Saud Bin Abdulaziz, *University-Health Sciences*, Dr. Fahad Al Hameed, *Chairman Intensive Care Unit*, Abobakr Yagoot, *Clinical Biochemistry Supervisor*, Ali Bawaeer, *Operation Manager*, and Mohammad Mohammadi.

KEY TAKEAWAYS

- Strong cross-departmental collaboration is a pivotal success factor to ensure uptake of changes and improve outcomes
- Utilizing insights from novel biomarkers, such as PCT, in combination with decision-making algorithms can substantially improve care and patient outcomes
- Measurement of outcomes and successes can be used to help garner buy-in from other departments and/or institutions looking to replicate best practices.

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