



Enhanced Discovery of Unidentified Comorbidities and Diagnosis Through the Use of Diagnostic Logics



Picture (from left to right): Osamu Yonekawa, Akira Yamamoto, Keiko Oba and Kentaro Naoda

The use of technology to support and enhance delivery of care is becoming more common and crucial in healthcare around the globe. Fully leveraging these augmented capabilities, interconnectivity and data within these technologies can have substantial impact on patient care, health outcomes and resource utilization. In order to realize the benefits of such technology, strong collaboration across departments and a drive to improve healthcare is required.

At Seirei Hamamatsu Hospital in Japan, the clinical laboratory has a strong focus on applying technology to provide clinical support regarding test inquiries and

research. Additionally, their laboratorians are known to frequently collaborate with their clinical partners to provide “Logistics Support” across teams. “Logistics Support” refers to activities that support diagnosis and treatment through the analysis of test results to find possible pathological conditions for more rapid communications to physicians.

To date, this integrated clinical care team has defined and implemented 27 diagnostic logics into clinical care. The logics involve use of flow charts to analyze combinations of test results as well as patient demographic data to provide potential diagnoses. The

output stratifies patients into 3 risk levels, in order to provide physicians with standardized comments on possible diagnosis and recommendations on the follow up action.

This proactive diagnostic support initiative has resulted in the identification of previously unknown cancers, anemias and other comorbidities, thus enabling early treatment and intervention to mitigate downstream risk, reduce healthcare costs and improve outcomes for patients. Additionally, screening of pre-surgery test results has resulted in \$80K of additional surgery and treatment revenue over a 3-year period. Success of this program has garnered widespread interest across Japan, resulting in 33 invited presentations over 2 years, including the Japan Society for Clinical Laboratory Automation (JSCLA), the largest clinical laboratory conferences in Japan.

This team from Seirei Hamamatsu hospital was recognized for their important outcomes and novel thinking through the 2020 UNIVANTS of Healthcare

Excellence award program with recognition of Achievement. Congratulations Kentaro Naoda, *Laboratory Manager*, Hidenori Nakamura, *Director of Respiratory Medicine/Director of Medical Safety Center*, Keiko Oba, *Laboratory Leader*, Kenta Usui, *Deputy Director of Hospital Administration*, Akira Yamamoto, *Lab Technician*, Osamu Yonekawa, *Laboratory Physician*.

KEY TAKEAWAYS

1. The clinical laboratory is uniquely positioned within hospitals to be a powerful clinical partner for enhanced strategic processes and clinical diagnosis.
2. Informatics is a powerful tool that enables insights and action to improve patient outcomes.
3. Through collaborative implementation of diagnostic logistics, previously unknown diseases can be identified and treated early.