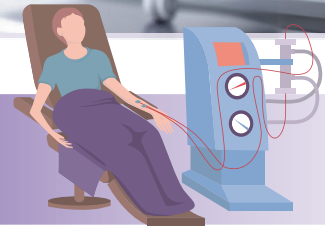


Smart Healthcare, Powered by Edge AI



AI-Powered Real-time Hemodialysis Analysis Solution

Clinical Pain Point

Taiwan has the highest density of dialysis patients globally, with over 90,000 dialysis patients annually. Approximately 50% of dialysis patients die from cardiovascular diseases, with heart failure being one of the major causes of death. For complications arising during hemodialysis, such as hypotension, physicians typically intervene based on immediate symptoms or instrument readings. Meanwhile, calculating dry weight during dialysis is challenging - removing too much fluid or too quickly can easily cause blood pressure to drop, leading to shock or even death. Currently, this relies heavily on physicians' clinical experience.

Artificial Intelligence Risk Prediction Algorithm

The artificial intelligence prediction system receives real-time physiological and dialysis machine parameters from patients, such as arterial and venous pressure, blood flow rate, etc. By capturing multiple data including patient medical records, test results, and medications, it performs real-time "personalized" AI calculations to predict the risk of heart failure early, allowing medical staff to take preventive measures. It provides real-time ideal dry weight calculations during dialysis, successfully improving the accuracy rate from the previous human estimation accuracy of 80% to 90%, delivering the most appropriate fluid removal treatment to patients, and improving dialysis efficiency. The visualization interface assists medical personnel in monitoring dialysis machine parameters and optimizes healthcare workflows.

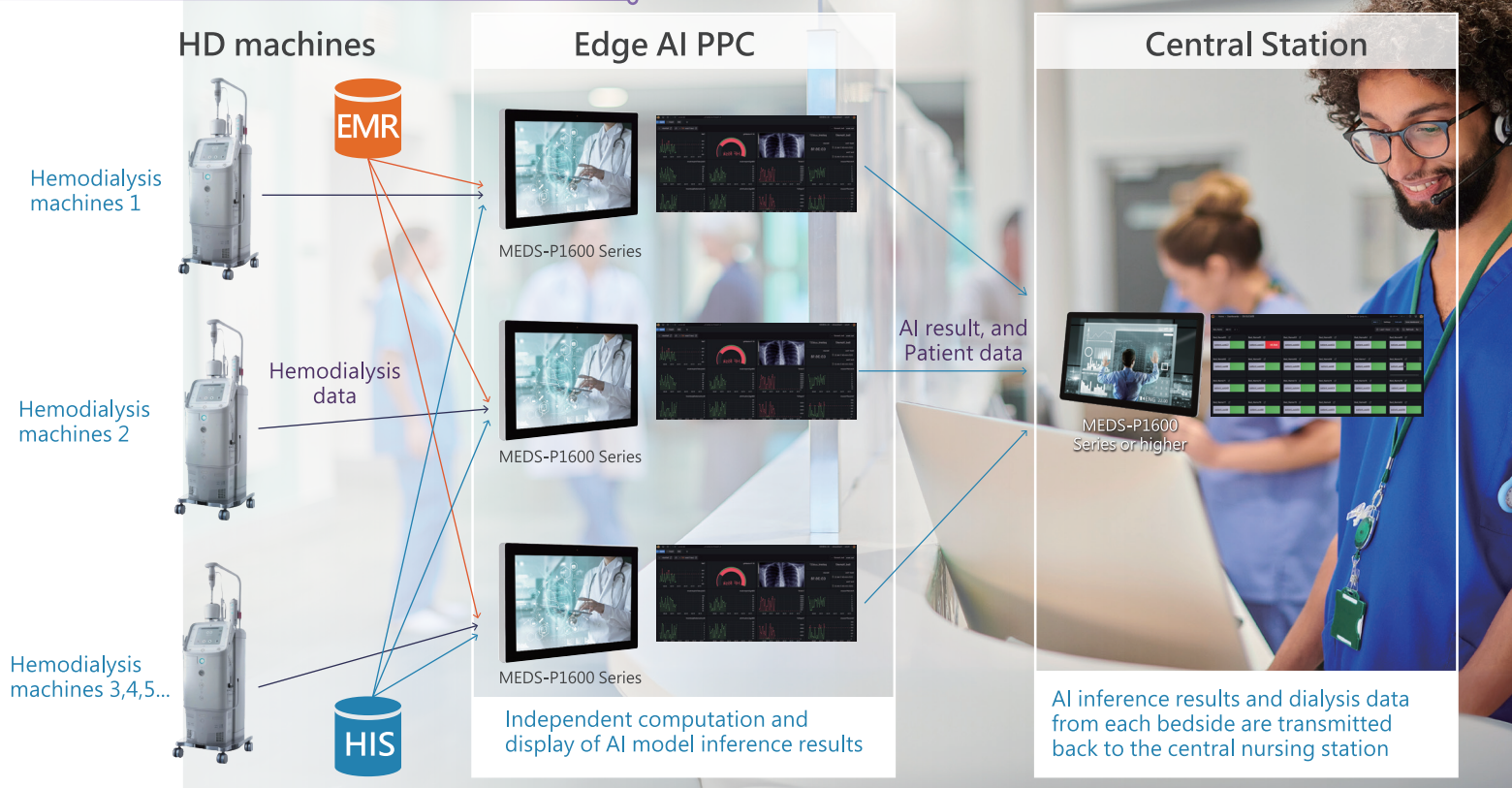
Solution Implementation

A Medical Panel PC is used for real-time data capture and processing. The MEDS-P1600 can capture critical data from dialysis equipment in real-time and calculate risk indicators through built-in AI algorithms, allowing medical personnel to quickly grasp trends in patients' heart failure risk and intervene early. This distributed standalone AI inference model not only transmits heart failure risk prediction values to the central station but also aggregates patients' basic information and critical parameter measurements to the central station, facilitating comprehensive monitoring by medical staff and further examination of high-risk patients.

Real-time Edge AI for time series analysis

Automated data recording and estimation significantly reduces the workload of medical staff. By combining MEDS-P1600 with edge AI technology, risk prediction and care efficiency is enhanced driving the medical industry toward a smarter, more efficient future.

The solution architecture diagram



MEDS-P1600 Product Advantages

To ensure system stability and high-performance operation, MEDS-P1600 offers the following technical advantages

1. High-performance Computing and Connectivity: Equipped with an Intel® Celeron® J6413 processor, providing stable and sufficient computing power to quickly process large amounts of real-time data, ensuring smooth computational execution.
2. Optimized Display and Operation Experience: Features a 15.6-inch FHD ultra-wide screen with 10-point PCAP touch support for gloved operation, allowing medical staff to operate intuitively in busy medical settings, enhancing convenience.
3. Medical Environment Adaptability: Adopts IP65 water and dust-proof design to handle the special environments of medical facilities, ensuring stable operation over extended periods.
4. Diverse Connection Interfaces: Provides 2 2.5GbE LAN ports and 6 USB ports, supporting Wi-Fi and Bluetooth modules, enabling seamless connection to medical information systems and ensuring real-time and stable data transmission.

MEDS-P1600



- Intel® Celeron® J6413 processor (Formerly Elkhart Lake)
- 15.6" Full HD 1080p resolution widescreen display
- True flat front panel with 10 points PCAP touch and glove operation
- Slim and fan-less medical system design
- IP65 water/dust proof front bezel
- 9-24V wide range DC input
- 2x 2.5GbE LAN & 6x USB ports on rear I/O
- Wi-Fi and Bluetooth combo module



MEDS-P1600



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