

Shizuoka City Shimizu Hospital

Shizuoka, Shizuoka Prefecture

Maintaining Hospital Functions to
Provide Medicine with
Compassion

Masatoshi Hagiwara

Manager
Diagnostic Technology Section
Medical Technology DepartmentSeismic Isolation Module
Model TGS**Aiming to provide health care trusted by the local community**

The Shizuoka City Shimizu Hospital was established in 1933 as a hospital for infectious diseases, and it now serves as a key hospital for the Shimizu district (population: around 230,000).

We work to revitalize regional medical care with our basic philosophy: "Aim to provide quality, patient-focused care and contribute to the advancement of regional health care." As one example, we work with general practitioners and home care staff, continuously sharing information so the entire network of local medical institutions follows up with patients after they have returned home from the hospital. At the same time, we are collaborating with the city and prefecture to strengthen our ability to function as a disaster base hospital.

What is a blood bank analyzer?

Our Diagnostic Technology Section is divided into seven divisions that conduct physiological, urine, pre-transfusion, biochemical, blood, microbial, and pathological tests. We perform a critical role in identifying the cause of an illness, performing tests necessary for treatment and checking the status of the patient's health and treatment.

When a foreign substance enters the human body, the body's natural reaction is to reject it. Blood bank analyzers mix the patient's blood with a sample to check for incompatibility before a transfusion and confirm there will be no adverse reaction, even when the blood types are the same. Our analyzers are running five to six hours a day, and they are on standby around the clock to be ready for emergency surgeries at night or on non-business days. In particular, if

Automated blood bank analyzer
with a seismic isolation system

a person is pregnant with a child who has a different blood type (in ways other than just their ABO blood group type), they may form antibodies related to the blood type. To prepare for heavy blood loss during childbirth, we perform pre-transfusion testing for everyone giving birth at our hospital during their 36-week check-up. The reason why we

do it at 36 weeks is because the impact from the fetus has settled at this point. Using a patient's own blood for a transfusion (autologous blood transfusion) has also become an option recently, but the amount of blood that can be stored is an issue, and it is sometimes not enough when the patient experiences heavy blood loss during delivery. That is why pre-transfusion testing is critical.

Strengthening our ability to function as a disaster base hospital

Before installing seismic isolation systems, we used to secure items to the floor to protect them from earthquakes. Seeing the damage caused by the Great East Japan Earthquake and Kumamoto Earthquakes, it is clear that method was insufficient. If a blood bank analyzer is not running due to a disaster, performing the tests manually would require significantly more time, and it would be too late for urgent transfusions. Human error also becomes more likely in a disaster situation, which could impact the patient's life. It is our duty as a medical institution to always think of BCP measures to prevent damage to our medical equipment and restore normal operations immediately. Seismic isolation systems are an effective way to mitigate damage to equipment by deflecting tremors caused by major earthquakes. During large-scale earthquakes in the past, we recognized the performance of THK's seismic isolation systems at other institutions, and we already had them installed for our hospital's medical information servers. When we replaced our automated blood bank analyzers, we seized the opportunity to introduce seismic isolation.

Going forward, we plan to install these systems for our biochemistry analyzers, too. Fortunately, we have not experienced another earthquake where we would have had to serve as an evacuation shelter since the major earthquake in 2011, whose tremors reached as high as 6 on the seismic intensity scale. However, from the perspective of the Sendai Framework for Disaster Risk Reduction 2015–2030 as well, we believe core hospitals in every region need to install seismic isolation systems for servers and hospital equipment to minimize earthquake damage and fulfill our true purpose: protecting the lives of patients.