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## Is There a Simple Answer to All Challenges in the ICU?

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With an average 1.5 times higher staff-to-patient ratio than general wards, today's Intensive Care Units set enormous challenges to caregivers, requiring constant, close monitoring as well as quick diagnosis and responses to sudden changes of patients' conditions. How can we make things easier in the ICU? What support do caregivers actually need to improve workflow efficiency and information management in the ICU?

Hospitals around the world are experimenting with innovative solutions to simplify the complexity of intensive care. As a leading medical equipment developer, Mindray works closely with clinicians and hospital management in order to develop an ICU solution that addresses all sorts of challenges in their daily work.

## High-acuity Patient Monitoring

For ICU doctors, it is important to be able to make quick diagnosis with maximum accuracy. Access to complete patient information at the bedside improves diagnostic confidence greatly, which can be achieved with a sophisticated patient monitoring workstation that integrates highly advanced monitoring parameters and seamless information systems.

Spaarne Gasthuis of the Netherlands is one of the first hospitals to install the world's first rotatable bedside patient monitor BeneVision N22, along with the entire integrated Monitoring and IT solution. The innovation-oriented hospital is built on a century-old tradition and is happy to welcome today's most cutting-edge medical technologies for the benefits of both their patients and clinicians.

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"For me, it is important for monitors to provide adequate information so that patients conditions can be seen at once in a save and precise way. In highly acute critical care settings, some patients need very particular parameters monitored. The modular parameters solves this with efficiency. I'm very impressed by some of its parameters, like rSO<sub>2</sub>, PiCCO and ScvO<sub>2</sub>, these are very advanced parameters and very important indication for quick diagnosis." commented Clinical Physicist Ir Hugo J Spruijt. Indeed with cutting-edge monitoring capabilities, caregivers are now able to make diagnoses with enhanced confidence.

## Seamless Data Flow

A powerful information system is essential in the ICU. And ideal ICU solution should support the integration of all critical care data, while enabling high-acuity patient monitoring and access to all clinical information when and where it is needed. By constructing a comprehensive IT network and connecting all devices with seamless data flow, the system not only improves clinician's work efficiency, but also creates a paperless future for the hospital, thus improving cost efficiency as well.

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Other than the above, Professor Roberto Fumagalli, Chief Doctor of Neuro Intensive Care in Niguarda Hospital, raised an intriguing concern outside the everyday clinical practices. Niguarda Hospital is one of Italy's most prestigious medical institutions, serving as a university teaching center and coordination centre for clinical research where more than 500 studies are performed each year.

When asked about his experiences with the hospital's BeneView Patient Monitoring System in the NeuroICU, Professor Fumagalli showed a fair amount of concern about the system's support in research and studies. "With the monitoring system that we currently use one of the fundamental features is that it allows patients to go for tests while their vital signs are being monitored. The patient is being constantly monitored. Another very important aspect is the ability to collect and store all the data so that even for research and study purposes you can always see what has happened to patients." said Professor Fumagalli.

## Ease of Use

In a busy environment, ease of use is an important factor in making the practitioner's workload easier to handle, and reducing the possibility of errors. The intuitive use of touch-screen monitors allows rapid checking of many parameters without the need to handle different control knobs. The numeric parameters and displayed lines are clear and easily understandable, and the compact arrangement of Mindray patient monitors means that all relevant data is available on the same screen. Reducing the number of devices is very helpful from an ergonomic point of view so practitioners can concentrate on just one monitor. And a full range of alarms facilitates rapid intervention. An additional benefit is that new staff can rapidly learn how to use the monitors aided by onscreen instructions, so training is simplified and they become rapidly integrated in the team.

In France, Medical ICU Chief Nurses of Centre Hospitalier Universitaire (CHU) de Toulouse speak highly of the BeneVision Patient Monitoring System in their departments. "It's very intuitive and easy to use. Basically you just follow the instructions the monitor gives, and you can input parameters without any trouble. Training with new nurses I've taken on has been a lot simpler, a lot easier. All they need to do is just to follow the touch screen instructions. Having patients monitored means that we worry less when we're working because their vital signs are recorded and everything is under control. This is especially important to have such information flow if you have to move between different departments for example between emergency and ICU." commented one of them.

## All-around, Tailored Support

Every ICU is unique. With varied specialties, patient types and different hospital infrastructure, they set a variety of scenarios of intensive care. Responding to the diversified challenges with a comprehensive engagement with the hospital, medical solution suppliers must work closely with hospital practitioners and staff over the course of installation, making sure that the solutions address their particular clinical needs.

For Parma University Hospital's newly constructed Children's ICU, Mindray consultants spent weeks in acquiring an in-depth understanding of the hospital structure and the variety of scenarios of patient care, as well as get to know the practitioners on their day-to-day activities before they proposed the final solution.

"We expect consultancy partners, not just equipment providers. Mindray were asked to propose technology ideas adapted to meet their specific clinical needs. Before proposing its final solution, Mindray analyzed in-depth the clinical and structural scenarios, and debated the various possibilities upfront with clinical end users and biomedical personnel. " Mr. Amori, Director of Medical & IT Technologies acknowledged.

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## **Mindray ICU Solution**

Mindray's comprehensive ICU Solution improves workflow efficiency and information management in intensive care environments. Providing advanced monitoring and life-support devices as well as advanced networking options, it guarantees the highest standards of care, as well as continuity of all patient information.

Mindray's patient-centric approach supports the integration of all critical care data, while enabling high-acuity patient monitoring and access to all clinical information when and where it is needed. Mindray's ICU total solution helps healthcare institutions improve critical care quality, work efficiency, patient satisfaction and cost efficiency.

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