NEXUS / ICU
The Solution for Intensive Care

NEXUS / ICU is a flexible information and communication system for intensive care.

All medical, care and treatment information is recorded at the hospital workstation with reference to patients and problems. Thanks to automatic transfer of monitoring, ventilation, dialysis and infusion data from medical technology and their continuous storage, existing intensive care monitoring is complemented by an efficient organization and communication tool. Integrated into the NEXUS system landscape, numerous process and application advantages result.

USER SUPPORT

NEXUS / ICU was developed to provide help to personnel working in an ICU in their daily documentation work. Studies show that the quality of documentation can be significantly increased by the introduction of ICU in intensive care. Workflows are standardized. Thanks to the higher documentation quality, in particular by improving the readability of regulations, there are significantly fewer medication errors with the implementation of ICU in intensive care units.

The requirements on an ICU are constantly increasing due to increasingly complex accounting procedures. ICU has long since become more than a pure documentation tool. NEXUS / ICU supports you as user, among others things, in the derivation of complex intensive care points and the correct calculation of the hours of ventilation without additional work for doctors or nurses.
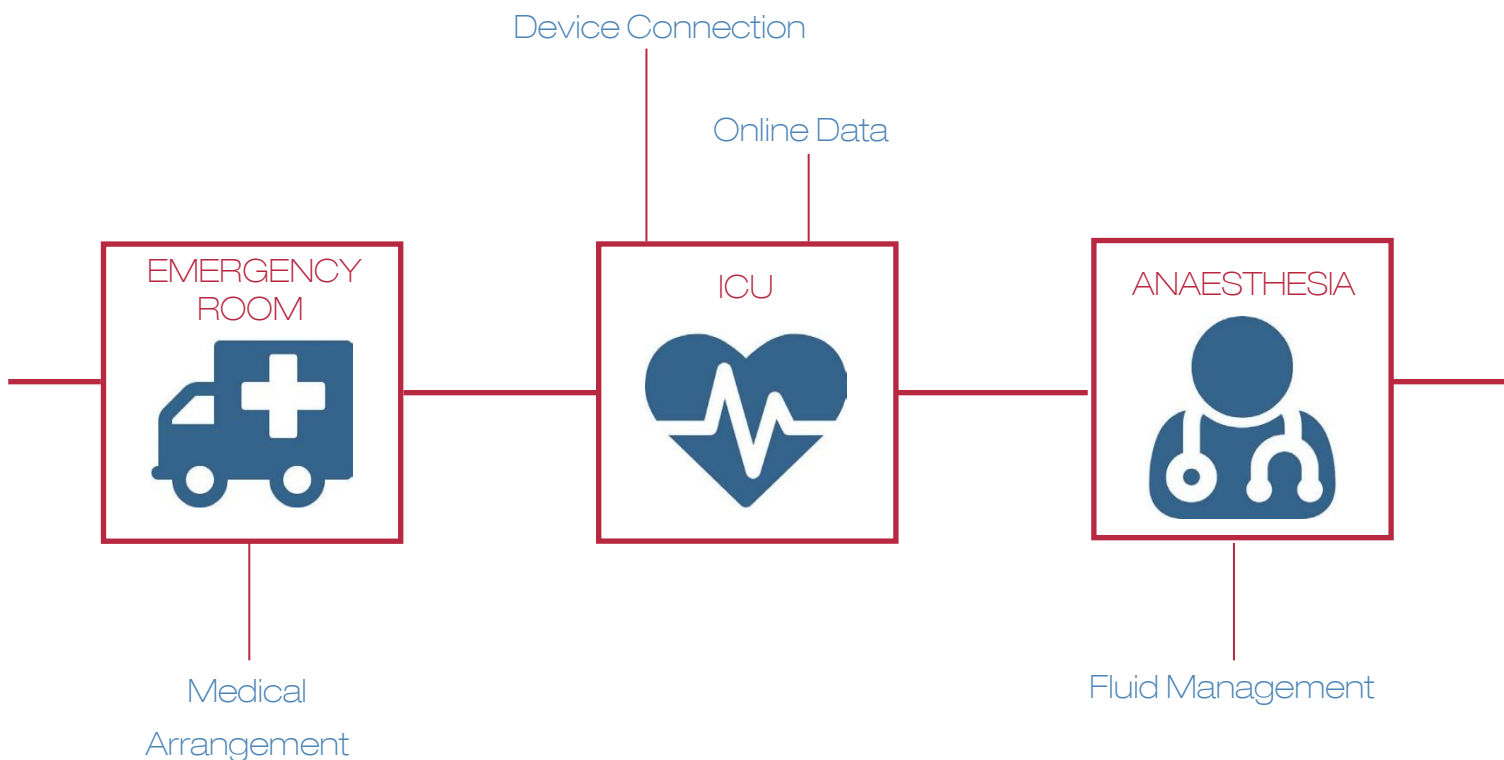
NEXUS / ICU is not limited to use at an intensive care unit. Documentation without media fragmentation concerning anesthesia documentation, recovery room, intensive care unit and all the way to a normal ward is a matter of course for NEXUS. As a result, you as user always have an overview of the entire course of treatment in a central work medium: the chart.

WORKFLOW

NEXUS / ICU is the central control and documentation instrument for you in an intensive care unit. You have an overview of the current treatment status, vital signs, laboratory values and third-party diagnoses. You control the things that are important for the treatment of your patients from the chart:

+ Medication
+ Doctors' instructions
+ Treatment documentation
+ Treatment goals
+ Catheters and drainages
+ Documentation of the course of treatment
+ Diagnosis requests and display
+ Access to standards

and much more.

Device Connection

Online Data

| EMERGENCY ROOM | ICU | ANAESTHESIA |

Medical

Arrangement

Fluid Management

CHARGE DETERMINATION

The time-consuming part of intensive documentation is the recording of the 25 parameters for TISS and SAPS score for complex intensive care treatment. NEXUS / ICU automatically provides the majority of these parameters, only a few of which must be supplemented manually. To this end, NEXUS / ICU fills out a form with the automatically derived quantities, which the user supplements or corrects. This provides significant relief in everyday clinical work.

The time-dependent remuneration components, e.g., mechanical ventilation hours and similar matters, are derived automatically from the documentation. NEXUS / ICU determines the mechanical ventilation hours according to applicable coding guidelines. Even long- stay patients with several ventilation and weaning phases are handled correctly according to the applicable coding guidelines.

Additional charges for certain drugs are also taken into account.

The "expensive" intensive care measures are more and more under the control of the supervisory authorities. On request, the required information can easily be extracted from the ICU and exported as PDF. A collection of predefined reports is available, which depict the measures carried out transparently.
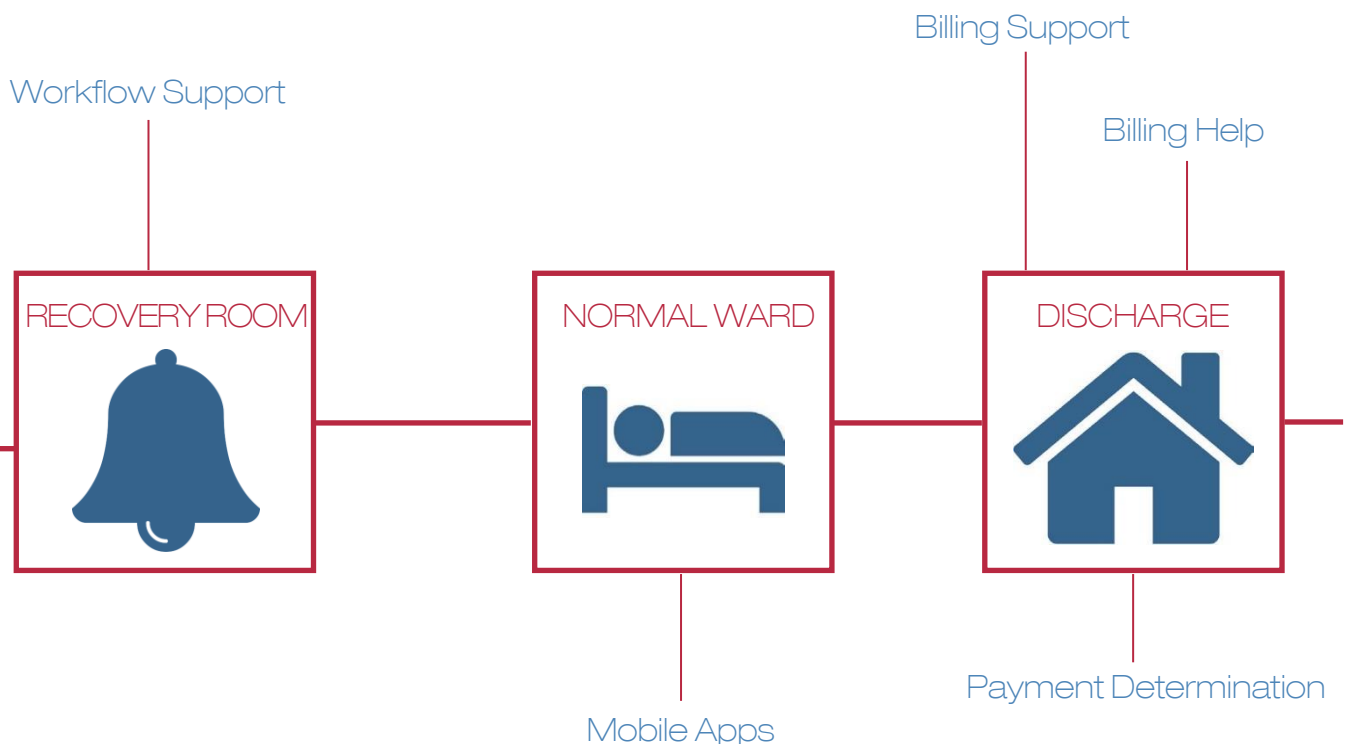
FLEXIBILITY

Thanks to the individualized arrangement of the function blocks of NEXUS / ICU, you get an application customized to the needs of your ward or department.

Optionally, you can arrange the display of vital data as well as ventilation, infusion and laboratory data, etc. according to your preferences. Freely select whether the data should be displayed in a graph or table or switchable between both as needed.

Each of these function blocks is placed and configured individually on different sides of the intensive chart in consultation with your specialists. Consequently, not only the different views of a normal ward, recovery room and intensive care unit are possible, but also displays and para- meter sets adapted to the clinical picture.

You can design charts for the operative ICU, neonatal ICU or neurological ICU completely according to your needs. Alternatively, the chart is based on specific clinical pictures, which you can then assign to individual patients. As a result, you always have exactly the information that is relevant for the respective case.

Of course, you can also add individual parameters ad hoc if special monitoring is required for a patient.

Workflow Support

Billing Support

Billing Help

RECOVERY ROOM

NORMAL WARD

DISCHARGE

Mobile Apps

Payment Determination

DISPLAY

The central presentation means of NEXUS / ICU is the day chart. In addition to measured values, measures, prescriptions and their implementation are documented in this chart. The time scale can be zoomed down to 15 minutes and up to 60 days.

VITAL SIGNS

In general, vital signs are transferred on-line from monitoring in the ICU. However, the simultaneous recording of manual data is also possible.

Online data can be validated by the user and provided with observations. These data are normally summarized before display in a chart or processed by other algorithms. Consequently, the display in the chart is arranged clearly.

However, a higher data density or detailed display is also necessary in the chart in certain situations. In this case, the user can manually (including retrospectively!) access the detailed original data.

The filtering capabilities of the raw data can be set separately for each quantity measured. A median filter with variable data quantity is currently implemented. Additional filters can be implemented after existing clinical evidence has been obtained.
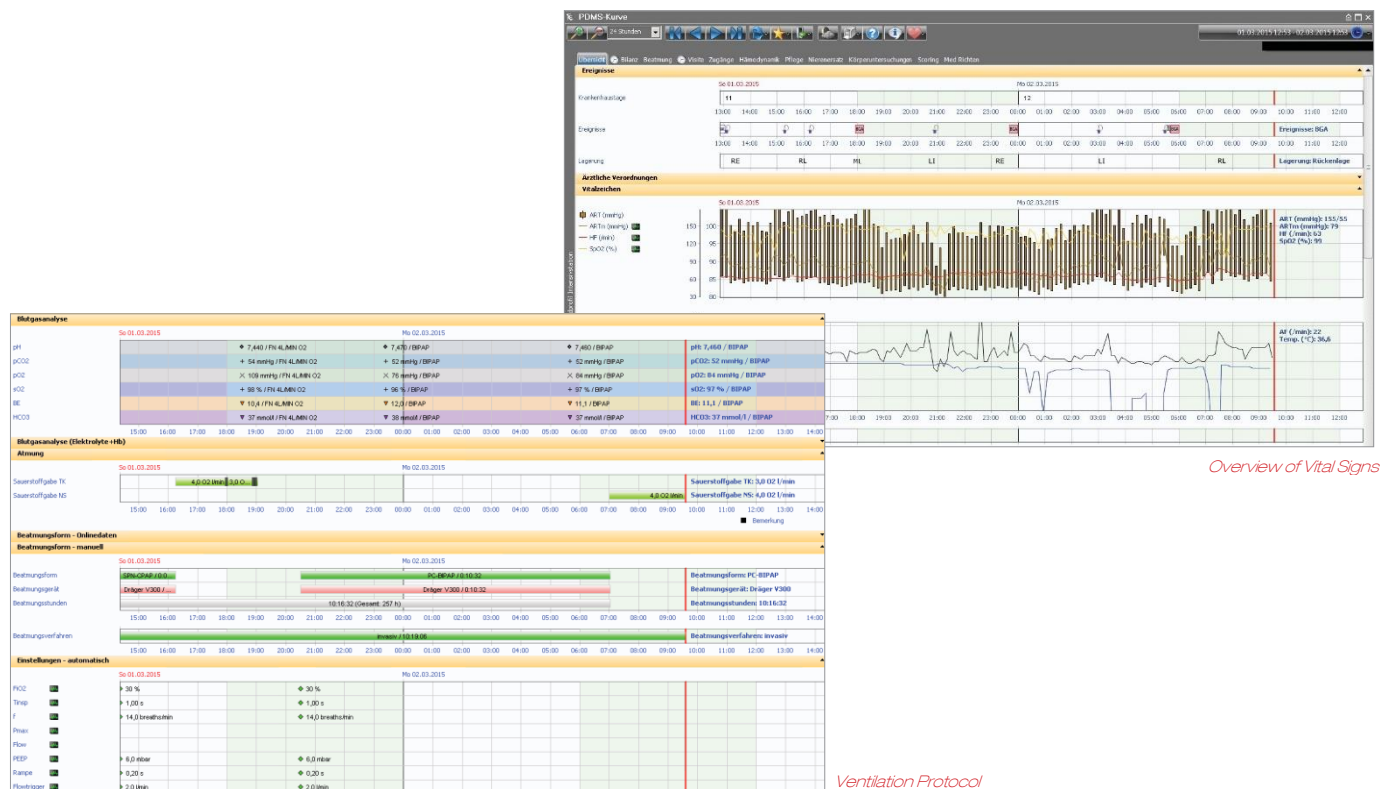
VENTILATION PROTOCOL

A ventilation protocol, which is usually depicted on one page, includes data taken over from the device such as ventilation mode, setting parameters and measured values as well as the results of blood gas analysis.

As a result, you obtain essential information clearly and at a glance to help you decide about further respiratory therapy.

The ventilation hours relevant to billing are calculated automatically from the data.

FLUID MANAGEMENT

Fluid management includes the control of patient fluid intake and output. Fluid intake is mainly by infusions in an ICU. Outputs are normally documented manually.

Overview of Vital Signs

Ventilation Protocol

PUMP MANAGEMENT

Pump data, such as flow rate, drug name, start/stop, bolus, etc. are automatically transferred from NEXUS / ICU and displayed in a bar chart. In addition to the significant labor savings for the nursing staff, the documentation quality is also significantly increased by the automatic transfer of brief flow rate changes (bolus).

The pump data are automatically offset against the fluid balance.

FLUID BALANCE

Automatic calculation of intakes is available with the fluid balance, e.g., from infusion management and outputs from drainages and catheters.

The balance interval and day are freely selectable. For example, interim balances can be generated every four hours. Contributions to the overall balance are displayed in different colors and detailed views can be shown.

LABEL PRINTING

Medication errors account for a large share of complications in an ICU. To reduce these errors and to preserve the clarity of complex perfusor towers, the DIVI (German Interdisciplinary Association for Intensive and Emergency Medicine) has published recommendations for syringe labels based on ISO 26825.

NEXUS / ICU supports this recommendation. Patient specific labels can be printed at a syringe-filling station for perfusor according to a doctor's prescription. In addition to the usual information required, these labels contain a barcode to identify the prescription. The pump data can be assigned automatically to the prescription via simple scanning. Medication errors are reduced as a result.

Fluid Balance

PRESCRIPTIONS

MEDICATION

A prescription dialog box optimized to the needs of intensive care units enables a physician to prescribe new drugs quickly and easily at a patient's bed. Predefined perfusor mixtures facilitate prescribing.

ICU medication is based on the extensively tried and tested NEXUS / MEDICATION module. Very complex prescription types are possible with it. In addition, this module provides an overview of all drugs to be prepared and administered in the entire ward.

NUTRITION

An integrated nutrition calculator computes the calorie needs of patients. The calculation is performed according to Harris Benedict or by entering an estimate. Special calculation formulas are available for neonatology that are automatically selected based on the patient's age.

As with medication, predefined mixtures can be used here such as the industry supplies. The variables included in the master data for these mixtures, such as calories, protein, fat, carbohydrates, trace elements, etc., are listed separately in the nutritional balance and can be compared with the nutritional target there.

DOCTORS' INSTRUCTIONS

Doctors' instructions can be documented as easily as drug prescriptions. Standards are also stored here that simplify work decisively.

Doctors' instructions can be selected from a catalog or as free text with text modules. Each instruction can be assigned to additional measures dependent on measured values, which are displayed in the chart together with the measure.

NURSING

The hospital can specify the treatment model for nurse scheduling. The complete process from the care problem to the treatment goal and all the way to nursing measures is available here. However, ad-hoc measures and corresponding evaluation are also included.

Nursing measures are again documented in a chart along a time axis. Nursing measures performed can be documented there.

ICU Chart

Medication

INVOICING

NEXUS / ICU can create invoices automatically based on stored formulas and saved data. The BMI, body surface and Horowitz index are included as a standard, just to name a few. Simple scores such as the Glasgow Coma Scale, Braden Scale and Norton Scale are also supplied and can be used as the basis for new, user-defined scores. Complex scores such as TISS and SAPS are programmed as fixed settings. They are recalculated automatically every day according to the applicable coding guidelines.

REPORTS AND STATISTICS

Even if you use NEXUS / ICU and do not want to do completely without printouts, the IT solution provides a very easy-to-use interface from which you can select pre-con- figured reports/overviews. These reports are automatically populated with the current patient data. You can print them, export to MS Word or store as PDF in an archive. You can create transfer reports, handover certificates, doctors' letters, labels and lots more with just a few mouse clicks.

In addition, standard statistics and lists for hospital management, materials management and training can be created, for example, about drug consumption, anesthesia times and nursing expenses broken down by activities.

NEXUS / INFORMATION STORE is available for scientific analysis, with which you can create almost any issue ad-hoc at your workplace quickly and flexibly.

DECISION SUPPORT SYSTEM

NEXUS / ICU has mechanisms that monitor specific parameters in the background and evaluate them according to specified rules. As a result of this evaluation, notifications are generated about overdue medications or other measures as well as certain clinical symptoms. These evaluations are triggered either time-controlled (e.g., for calculating the TISS/SAPS scores) or event-controlled (for example, due to new laboratory values).

Notifications about overdue prescriptions, rules for SIRS (systemic inflammatory response syndrome), HIT (heparin induced thrombocytopenia) and acute renal failure are currently implemented. Others are in the planning stage.

The notifications are shown patient-overlapping in a special area of the ICU chart and consequently are always available at each ICU workstation.

INTEGRATION INTO THE NEXUS SYSTEM LANDSCAPE

NEXUS / ICU can be used to display a wide range of information from the surrounding NEXUS / HIS. Firstly, you can view data from HIS forms or modules and to call them up directly. Secondly, all appointments can be viewed in the context of medical documentation.

In addition to appearing in a form-type overview, requests and associated findings can also be viewed and called up directly in NEXUS / ICU.

DEVICE CONNECTION

Manufacturer-specific device protocols of different devices are converted and evaluated by special device drivers into an internal format. NEXUS currently has more than 100 device drivers and connection options, and additional drivers are being developed continually.

The system can automatically detect medical equipment installed permanently at a patient's bed as well as mobile- operated devices.

The user always has full control of the documented data thanks to the subsequent validation and commenting possibility of data transmitted online.

ADVANTAGES AT A GLANCE

+ Interdepartmental use (OP ➔ RR ➔ ICU ➔ Normal Ward); Documentation without Media Fragmentation
+ Automatic Service Derivation from the Documentation
+ Common Database with NEXUS / HIS
+ Decision Support System

+ Integrated part of your NEXUS / HIS
+ Workload Reduction thanks to Default Setting of Scoring Forms
+ Protocol, Graph and Label Printing, PDF Generator
+ Hospital-Wide Evaluations
+ Certified as a class IIa medical device

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