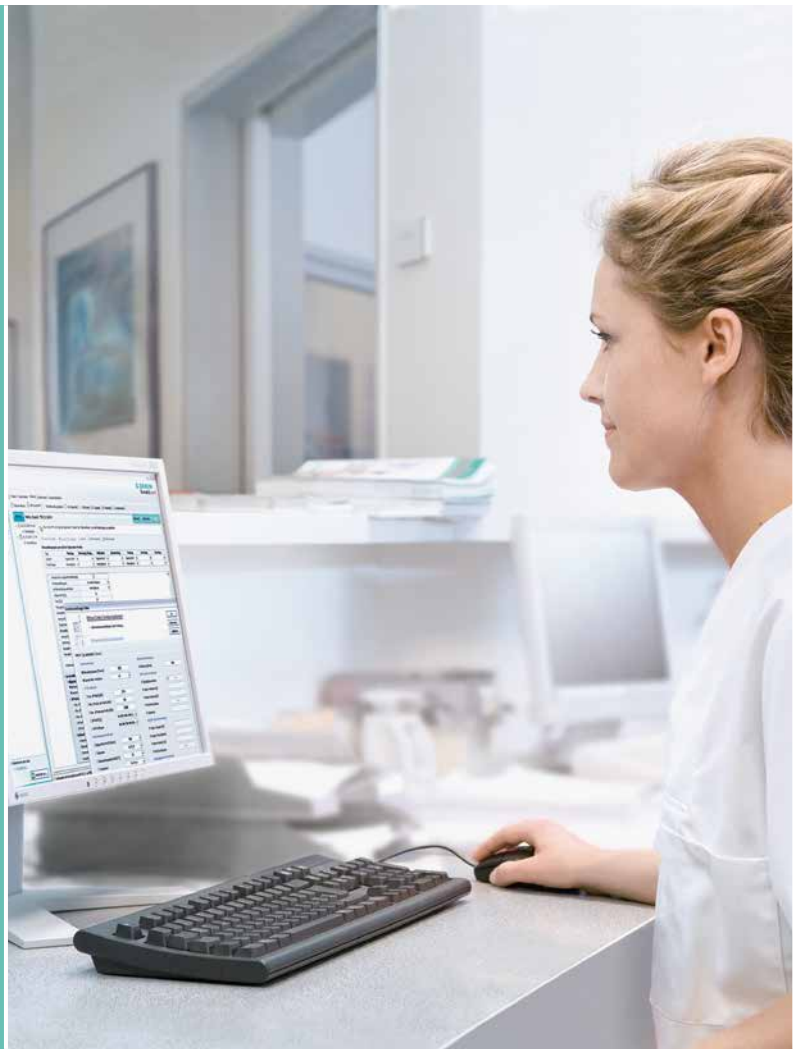
The Nexadia System

Smart data-management



Hemodialysis

B BRAUN
SHARING EXPERTISE

Optimized processes in everyday dialysis routine

Nexadia – A good choice
In dialysis, as in other disciplines, both medical and nursing staff are faced with the challenge of ensuring reliable and efficient care within the scope of legal provisions and economic requirements.

Dialysis centers are only able to achieve high-quality medical treatments and efficient processes if daily data are retrieved, processed, and filed effectively.

Our innovative and intelligent data-management system Nexadia helps you to simplify these processes considerably and facilitates preparation of the documentation required for quality management. Nexadia gives you efficient support in your everyday practice routine.

- Increased cost efficiency
- Automation of complex tasks
- Fewer administrative activities and more time for the patient
- Consistent documentation for optimum quality assurance
- Easy operation meeting practical requirements
- Automated saving and filing of relevant data

Nexadia: Establishing connections

The Nexadia system: Monitoring software and database
Nexadia Monitor is a well-structured and user-friendly software which provides clear view and control of a wide range of processes in dialysis treatment.

The data generated in connected dialysis machines, analyzers (e.g., blood gas analysis), and patient scales are automatically transferred and saved to Nexadia Monitor, which enables clear data visualization and convenient editing of the data. Thanks to the bidirectional data transfer between Nexadia Monitor and the connected dialysis machines, consistent and up-to-the-minute data records can be called up at any time, even during treatment.

Nexadia Expert is a powerful and user-friendly database for dialysis-center therapy management.

Operation of Nexadia Expert is intuitive. Functions include the editing and archiving of all treatment- and patient-related data and preparation of the documentation required for quality assurance.

Data from other medical information systems can also be imported and managed, e.g., patient master data, laboratory results, findings and diagnoses from external physicians.

Nexadia Expert is well coordinated with the Nexadia monitoring software and automatically initiates bidirectional data transfer to and from Nexadia Monitor and any other equipment connected to the system.

Together, Nexadia Monitor and Nexadia Expert provide an optimum system: highly efficient and easy to use (Fig. 1).

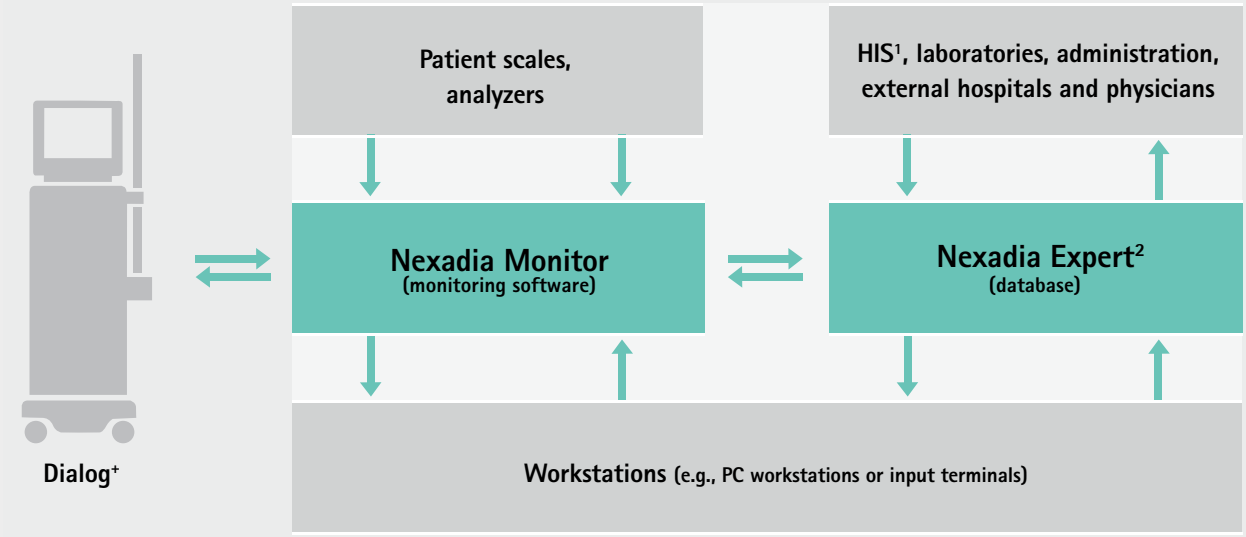


Fig. 1: Schematic overview of Nexadia

[1] Hospital information systems
[2] Or other local database systems. We inform you of compatible systems on inquiry.

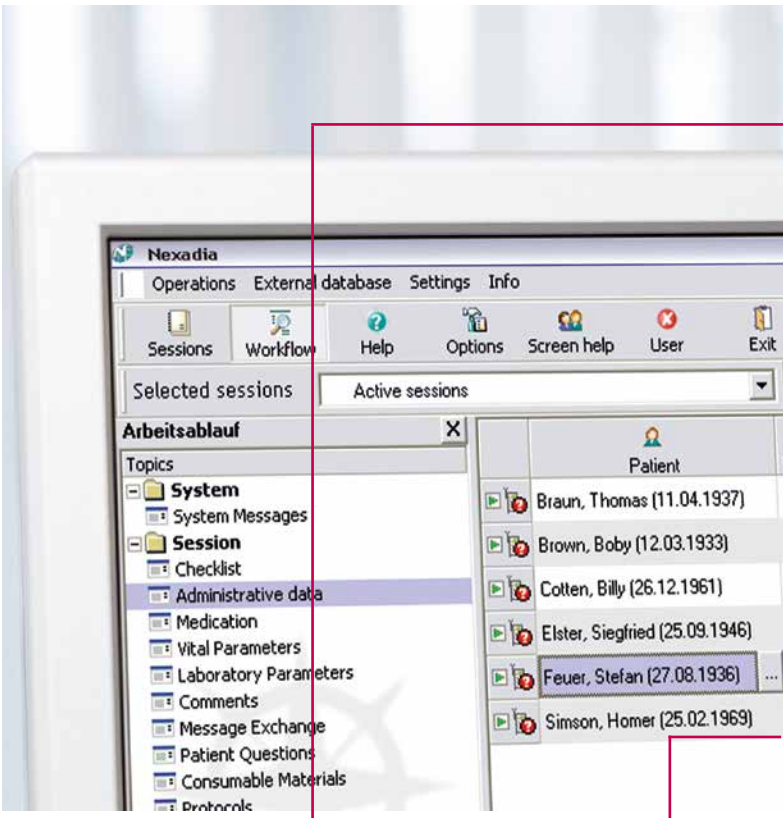
Interactive software: Nexadia Monitor

Optimized workflow
During dialysis therapy, Nexadia Monitor helps you simplify and speed up procedures, as well as improve their reliability and safety.

At the start of the treatment, patients log on to identify their saved therapy profiles. Log-on is quick and easy thanks to an individual patient card, which is identified by an external card reader on the patient scales.

The patient's current weight is directly transferred to the monitoring software via the network. Taking the patient information filed there as a basis, Nexadia Monitor automatically determines the suitable UF rate, which can also be updated manually if necessary.

Later in the treatment course, patients insert their cards in the dialysis machine for log-on. This initiates automatic download of the individual treatment parameters.
After confirmation of these parameters, dialysis can be started immediately – without the nursing staff having to make any time-consuming manual inputs or records.



Automation saves time
Nexadia Monitor automatically retrieves, consolidates, and saves all data from the machines and devices connected to the network. There is no further need for time-consuming manual recording.

The easy-to-use graphical user interface can be freely configured according to individual requirements. It visually represents the generated data with self-explanatory icons. Just click on one of these icons to open the related functionality in a separate dialog, where it can be viewed and edited. Since communication is bidirectional, you can directly execute and confirm any instructions displayed as text messages on the screen of the dialysis machine.

The wide range of automation processes provided by Nexadia Monitor makes dialysis therapy considerably less labor-intensive, thus allowing nursing staff to devote more time to individual patient care.

Data retrieval

Nexadia Monitor can be connected to a network comprising many machines and devices, so that the data from dialysis machines, scales, and external blood pressure monitors can be recorded.

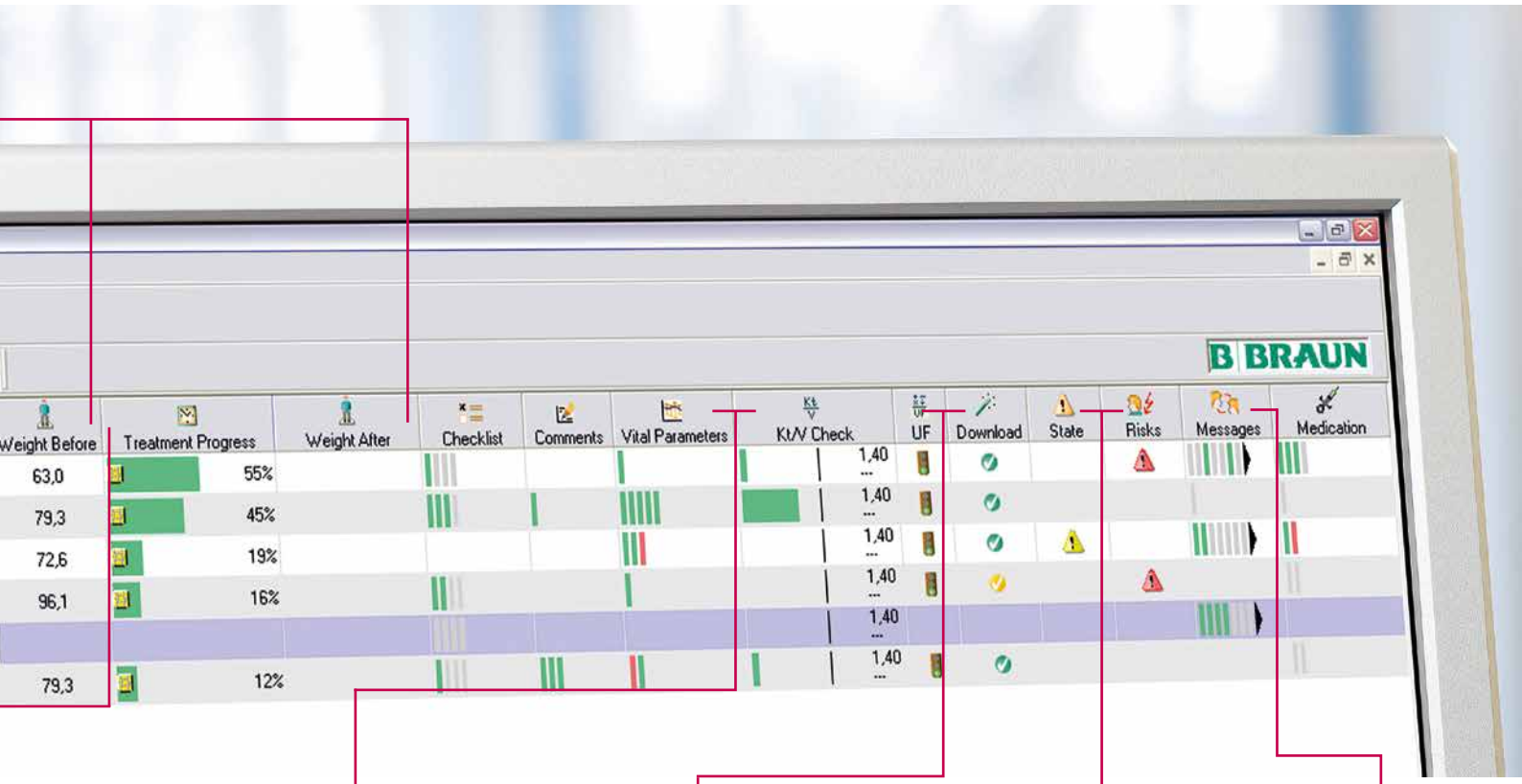
- **Complete retrieval of treatment parameters**

Monitoring

The treatment progress is displayed continuously, and possible risks are signaled immediately.

Checklists provide a useful and convenient tool.

- **Monitoring of treatment**



Documentation

All treatment data and any event occurring during the treatment, vital parameters, etc., are stored. For example, time in dialysis, ultrafiltration volume, blood flow and Kt/V.
Any data required for quality assurance, accounting, and stock-keeping are documented.

- **Continuous storage of all data**
- **Reduced administrative work**

Download

Individual patient parameters from the monitoring software are directly downloaded to the dialysis machine.

No additional settings are necessary.

- **Fast and easy transfer of settings**
- **No input errors**

Warning functions

Self-explanatory colored icons indicate risks, alarms, warnings, instructions that have not been followed, and vital parameters that have reached values outside of limits.

Just click the icons to open detailed information.

- **Early detection of risks**

Messaging

With Nexadia Monitor, you can send text messages between the workstations and dialysis machines.

This allows instant transmission and implementation of physician instructions.

- **Time-saving**
- **Fast and reliable intervention**

Flexible database: Nexadia Expert

The information system for dialysis
Data must also be retrieved, edited, or evaluated in the time between treatments when there is no dialysis. Such data may include patient and treatment parameters and information about the creation of accounts, stockkeeping, and quality assurance, with attendant documentation.

Nexadia Expert is a database for a variety of applications which supports fast and clear control of therapy management in your dialysis center (Fig. 2).

Digital patient file
Patient and treatment data can be entered into Nexadia Expert after the treatment is complete. If Nexadia Monitor is connected, these data are transferred automatically and quickly via a defined interface where they are constantly available, complete, and up to date.

Moreover, Nexadia Expert allows you to collect all patient-related data in a digital patient file, so that you can save both space and paper. You can record diagnoses and findings as well as medications and parameters from laboratories, external hospitals, or medical specialists.

This allows accurate scheduling of future dialysis treatments, including exact dates, durations, and UF rates, as well as prescriptions and medications.

Considerably fewer administrative tasks
The administrative tasks associated with the everyday dialysis routine are easy to perform with Nexadia Expert. Integrated reporting and exporting functions support quality assurance and facilitate control and documentation tasks.

Nexadia Expert can support, document, and manage the entire hemodialysis procedure – from the first weighing results to the transfer of data to connected systems.

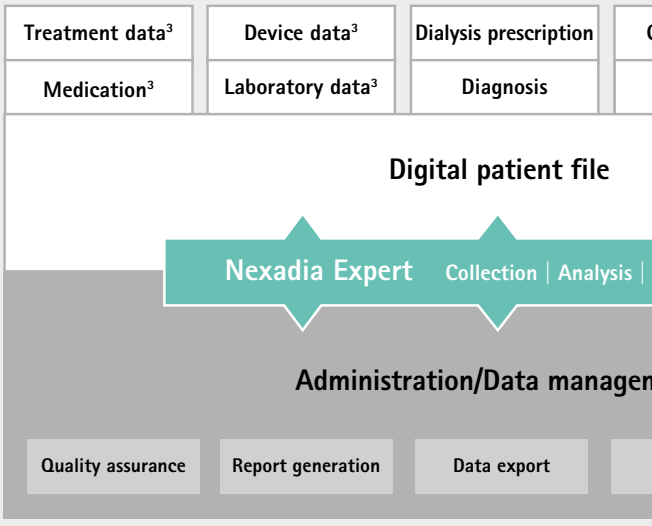
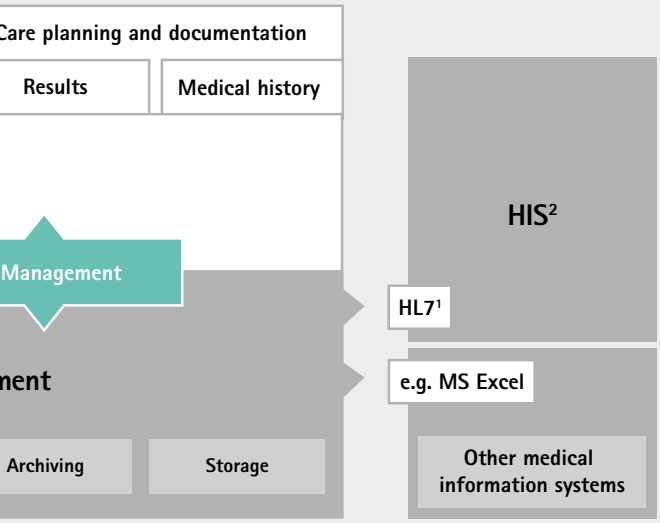


Fig. 2: Features/Tasks Nexadia Expert



[1] Health level 7 – an international standard for the exchange of data between computer systems in the health care sector
[2] Hospital information system – the central computer system in a hospital for processing administrative and medical data
[3] If the Nexadia Monitor system is connected, the data collected are transferred to Nexadia Expert on completion via a defined interface

Quality assurance with Nexadia Expert
Quality assurance requires proof of the consistent high quality of dialysis treatments. Nexadia Expert provides numerous functions to implement quality-assurance measures – using the information about the Kt/V obtained during treatment by the innovative Adimea system in particular.

The majority of data relevant to quality assurance are automatically retrieved during the treatment[3], thus considerably reducing manual documentation work.

Furthermore, Nexadia Expert also supports the storage of large volumes of additional data, which can be used for quality-assurance purposes.

- Individual and comprehensive dialysis regime
- Medical data at a glance
- Paper- and time-saving management
- User-friendly quality assurance
- Systematic process optimization
- Continuous information management
- Connection of external data sources

Dialog⁺, Adimea, and the data-management system Nexadia: Well-balanced harmony
Perfect results require perfect teamwork: with our treatment system, Dialog⁺, we offer – on conjunction with Adimea and the Nexadia data-management system – the perfect treatment environment for patients requiring dialysis.
The combination of innovative, intelligent hardware and software solutions guarantees an outstanding treatment standard, the optimization of treatment parameters during ongoing treatment, and proof of treatment success.

Dialysis treatment

Scale
(identification via chip card)

Dialog+
(identification via chip card)

Analyzer
(identification via chip card)

The settings for the dialysis treatment, including checklists and messages, are automatically transferred to the Dialog+.

The Nexadia system is the result of 'networking' single hardware and software components.

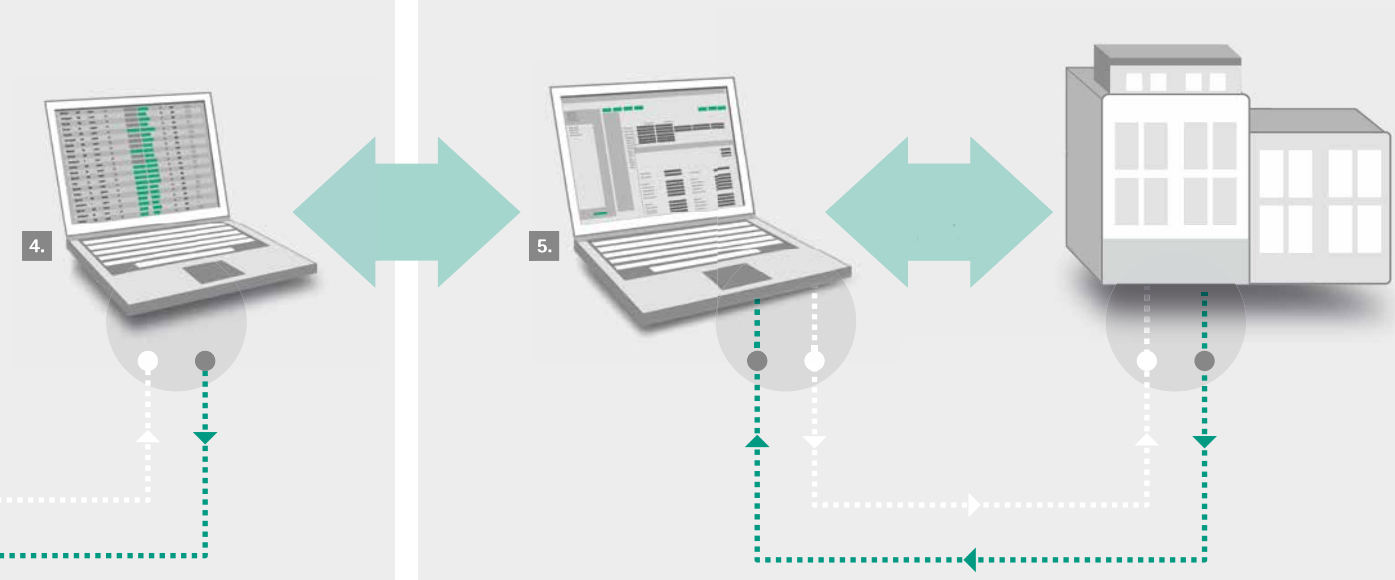
Monitoring/ Data recording

Nexadia Monitor

Administration/ Data management

Nexadia Expert

HIS[1]
Laboratory systems
QMS[2]



[1] Hospital information systems
[2] Quality-management systems

Therapy sequence using the Nexadia data-management system

1

The patient visits the dialysis center to obtain regular treatment. The patient is weighed or steps on the scale and logs on, identifying himself with his Nexadia patient chip card.

The predialytic weight is transferred automatically to the Nexadia Monitor system, where it will be used for further calculations.

2

The nursing staff prepares the dialysis station. The patient is connected to the dialysis machine.

The nursing staff inserts the patient chip card in the dialysis machine, which then requests the download parameters (preset machine values).

The nursing staff displays and checks the values transferred to the dialysis machine and explicitly confirms and releases the values by simply pressing a button.

- Treatment can now begin with these preset values.

Communication system

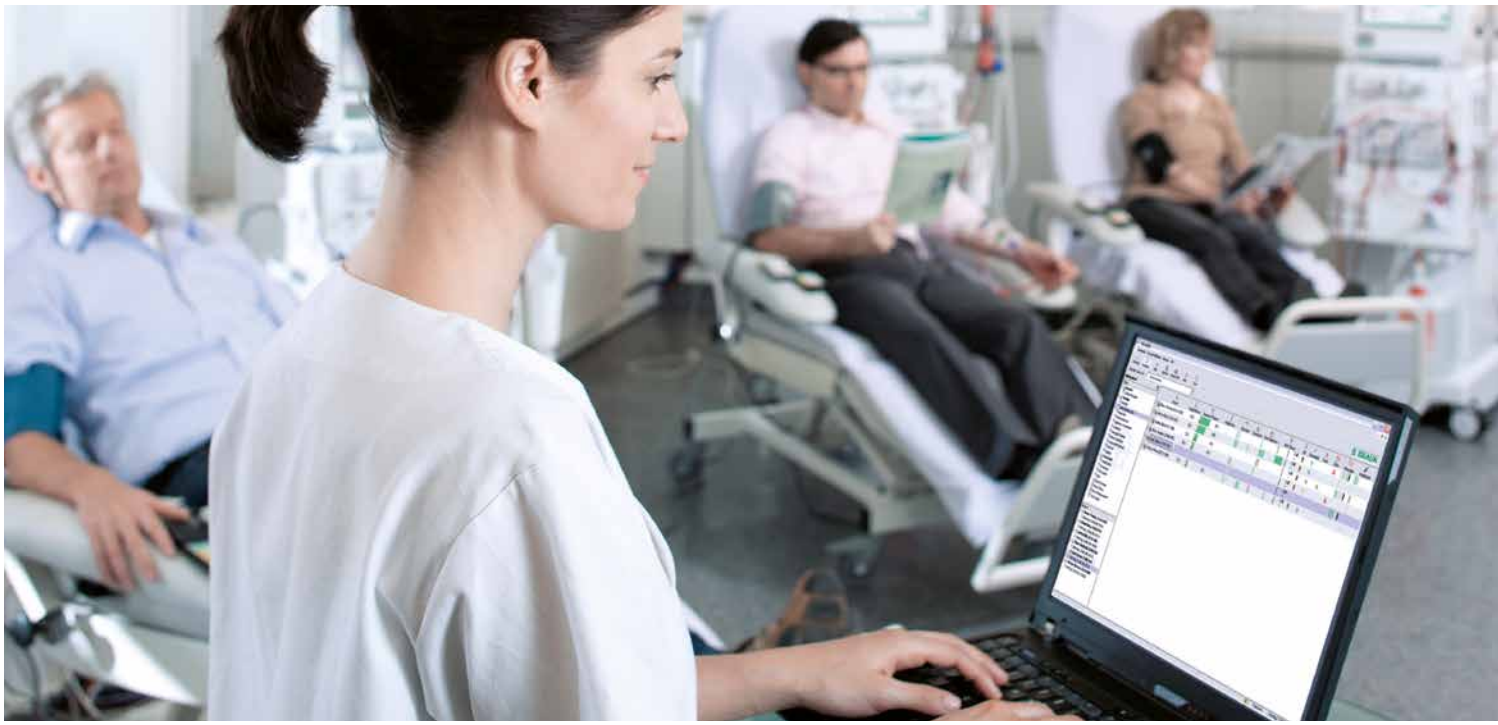
While therapy is in progress, treatment and device data are continuously recorded.

Alarms and warnings from the dialysis machine are immediately transmitted to Nexadia Monitor, where they are displayed.

During therapy, text messages can be sent from Nexadia Monitor to the dialysis machine and, in the other direction, reports for therapy documentation can be sent from the dialysis machine to Nexadia Monitor.

The results of the automatic blood pressure measurements are also transmitted to Nexadia Monitor, where they are stored.

- All recorded data are stored in Nexadia Monitor and are available for export to Nexadia Expert.



4

At the end of the treatment, the patient is disconnected and weighed once more.

As previously, the patient is identified by his patient chip card, and his postdialytic weight is transferred automatically to Nexadia Monitor.

If necessary, the nursing staff and the patient make further agreements before the patient leaves the center.

Further relevant information can also be added to the session data record created by Nexadia Monitor. Then the values are checked and the session is completed.

On completion, a discreet data record is transferred to the higher-level Nexadia Expert system.

All data from the current therapy (and all previous therapies) can be viewed and accessed at any time in the Nexadia Expert system.

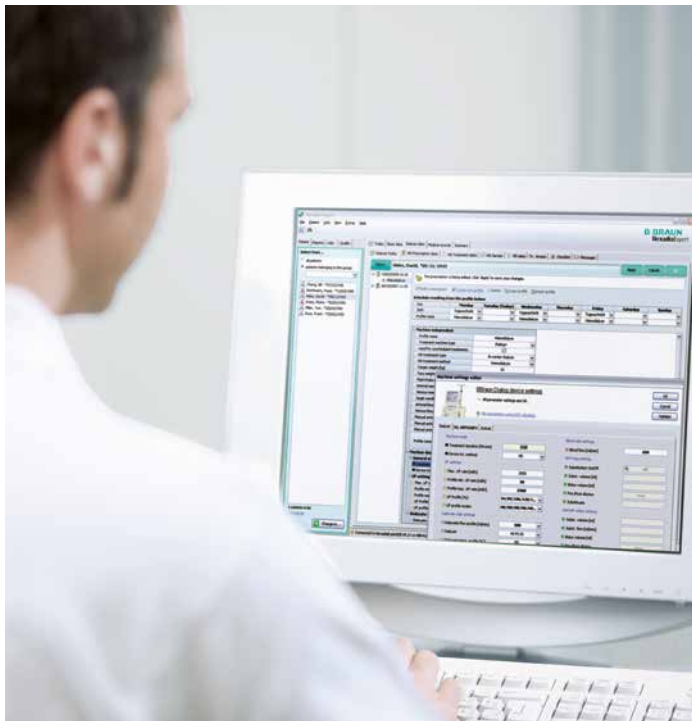
Nexadia Expert also lets you store, modify, and analyze a wide range of additional data.

Aside from recording diagnoses and laboratory data, maintaining clinical records, and administrative features like storage and manifold analysis options, the module for dialysis planning and documentation is a key component of Nexadia Expert.

This module lets you schedule treatments and create individual patient prescriptions (treatment and machine parameters) and modify them where necessary.

These individual prescriptions provide a basis for each new dialysis procedure.

- All current data are transferred from Nexadia Expert to Nexadia Monitor and, from there, to the dialysis machine, where the default values are set (see above, Step 2).



Quality management

Nexadia Expert particularly supports a center's quality management. All data stored in the system can be compiled and exported as desired (e.g., in the form of Excel or PDF reports).

In addition, the HL7 interface can be used to exchange data with other connected systems, such as the hospital information system (HIS), where the exported data can be used (e.g., for accounting purposes).

Systematic networking forms the basis for success

Closer to the patient
A prospective study[1] was conducted to examine the effect of Nexadia Monitor on the workflow of a dialysis procedure.

The study compared the time nursing staff required for certain processes in the treatment of 10 patients prior to implementation of Nexadia Monitor with the time required subsequent to implementation.

The study showed that the data network of the dialysis center considerably reduced the time needed for each dialysis procedure – time which the nursing staff could then instead devote to the patient.

In a total of seven processes, Nexadia Monitor helped to reduce the time the nursing staff needed per patient and per treatment by more than 21 minutes (Fig. 3).

If Nexadia Monitor is used in combination with Nexadia Expert, even more time can be saved, which is then available to medical staff. As personnel become increasingly familiar with the Nexadia system, a positive learning-curve effect may also be expected. As a result, you could ultimately expect staff to save even more time when performing daily routine tasks.

Intelligent technology for individual requirements
The basic requirements for a data-management system are flexibility and ease of operation. The Nexadia system adapts to meet your work requirements – not the other way around.

The software interfaces of the system allow numerous combinations and connections, for example to hospital information systems. In addition to our Dialog+ and dialysis machines, peripheral equipment, such as patient scales, can also be incorporated into the network via standardized hardware interfaces.

Please do not hesitate to contact your local representative if you have any further enquiries.

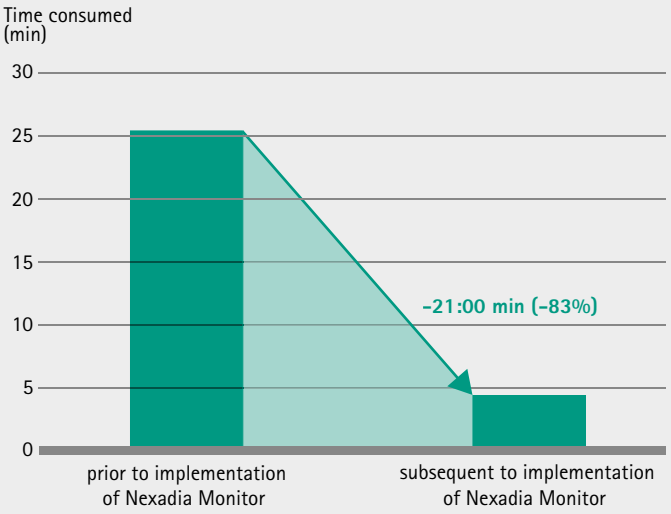


Fig. 3: Study results for nursing staff[2]

Time saved[3] with ...

1. integrated automatic blood pressure measurement	**100%**
2. predialytic weighing	**23%**
3. setting of parameters in dialysis machines	**55%**
4. entering of data in treatment records	**97%**
5. measuring of blood pressure during treatment	**100%**
6. postdialytic weighing	**17%**
7. checking of treatment records	**43%**

[1] Osterkorn D: Networking for success in dialysis centers: A prospective comparative analysis. Gesundheitsökonomie und Qualitätsmanagement 2006; 11: 112-116.
[2] Per patient per treatment.
[3] Steps numbered chronologically on the basis of a dialysis procedure.

Nexadia and Dialog⁺ in combination
Used in combination, the integrated Nexadia system and the Dialog⁺ dialysis machine allow intelligent data retrieval and management.

The Dialog⁺ has outstanding network capabilities. It ensures optimum support for users and reduces their daily workload. For example, the touch screen can be used as an input terminal for Nexadia.

Together, Nexadia and Dialog⁺ ensure ideal conditions for high-quality dialysis with optimized processes.

Support and service
The Nexadia product range also includes software maintenance and upkeep, installation, consulting, and training services.

Find the right balance
With the Dialog⁺ dialysis system, available in three basic configurations, B. Braun is raising the bar in the field of extracorporeal blood treatment. In Dialog⁺, intelligent software is deeply integrated into sophisticated high-grade, hardware-equipped original accessories. As with every one of our products, every purchase is backed by excellent service support and dependable global logistics. The Dialog⁺ dialysis system represents the foundation of our concept: therapy quality, efficiency, and ergonomics.

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