



SPACEPLUS & ONLINESUITEPLUS

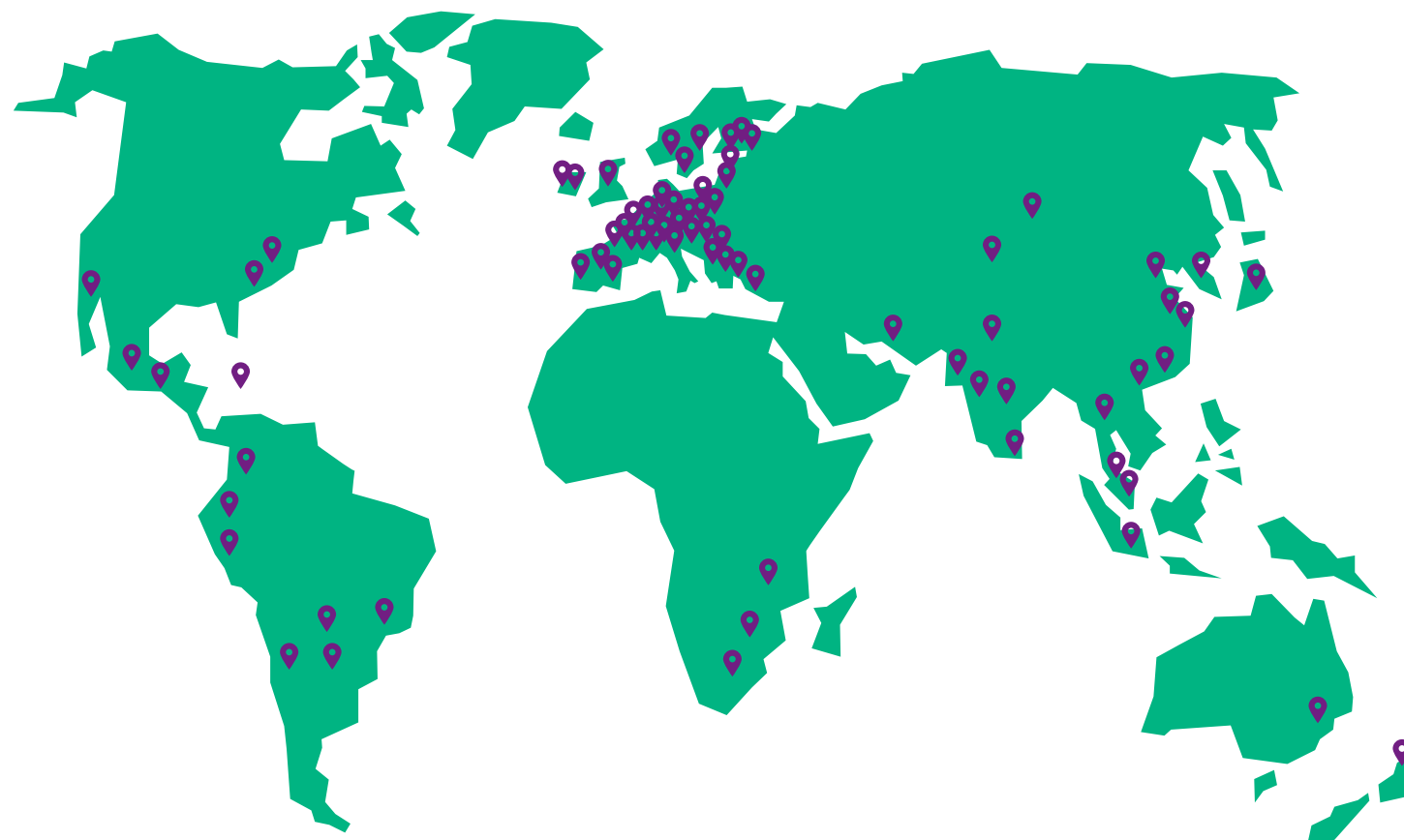
SPACE^{PLUS} & ONLINESUITE^{PLUS}

ADVANCED – SUPERIOR – DIGITAL

We protect and improve
the health of people
around the world.

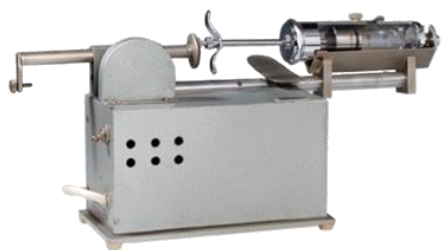
OUR VISION

B. BRAUN AIS – 70 YEARS OF EXPERTISE



MORE THAN 1,600,000 PUMPS WORLDWIDE!

B. BRAUN – 70 YEARS OF EXPERTISE



1951



1964



1978



1988



1997

1959



1971



1982



1992



B. BRAUN – 70 YEARS OF EXPERTISE

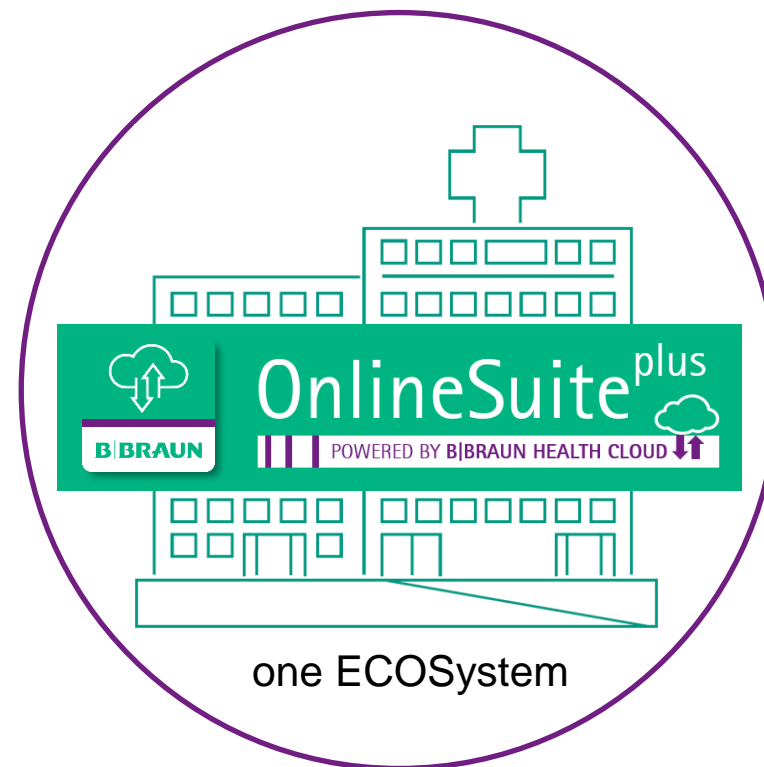


2004

TODAY

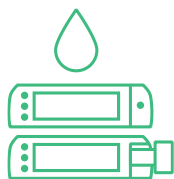


2018



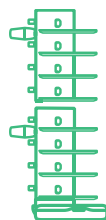
Trust in experience
Quality of life

ADVANCED



IP44 MOISTURE
PROTECTION

B. Braun Melsungen AG



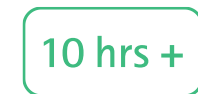
SUPERIOR
WORKPLACE
DESIGN



OUTSTANDING
ACCURACY



SYRINGE
PISTON BRAKE



BATTERY
CAPACITY



WIFI

SUPERIOR



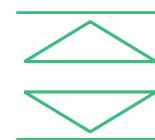
SYRINGE
STATUS VIA UI



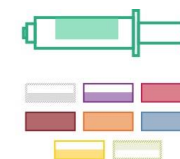
INTUITIVE USER
INTERFACE



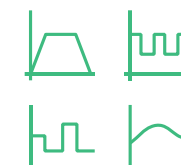
AT A GLANCE



DOSEGUARD –
THE SAFER, THE
BETTER

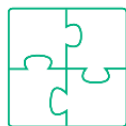
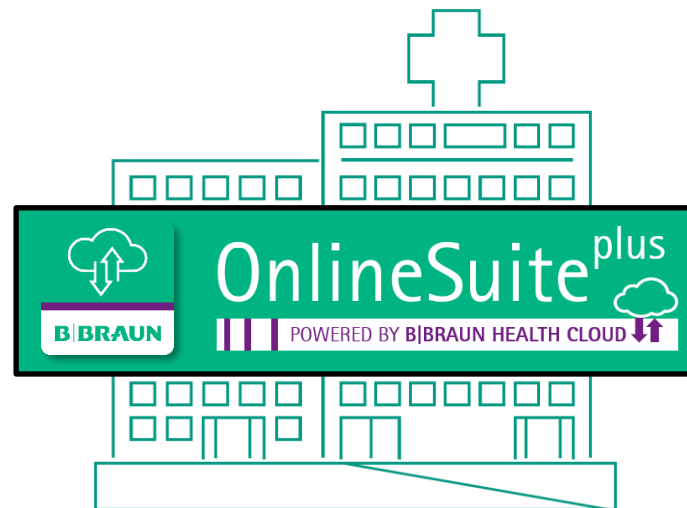


DRUG COLOR
CODING(ISO
26825:2020)



VARIOUS
THERAPY
MODES

DIGITAL



CENTRAL DIGITAL
PLATFORM



SMART
APPLICATIONS



SEAMLESS
INTEGRATION



ENCRYPTION FOR
CYPERSECURITY



B. BRAUN
HEALTH CLOUD

OnlineSuite^{plus}



...part of smart infusion therapy

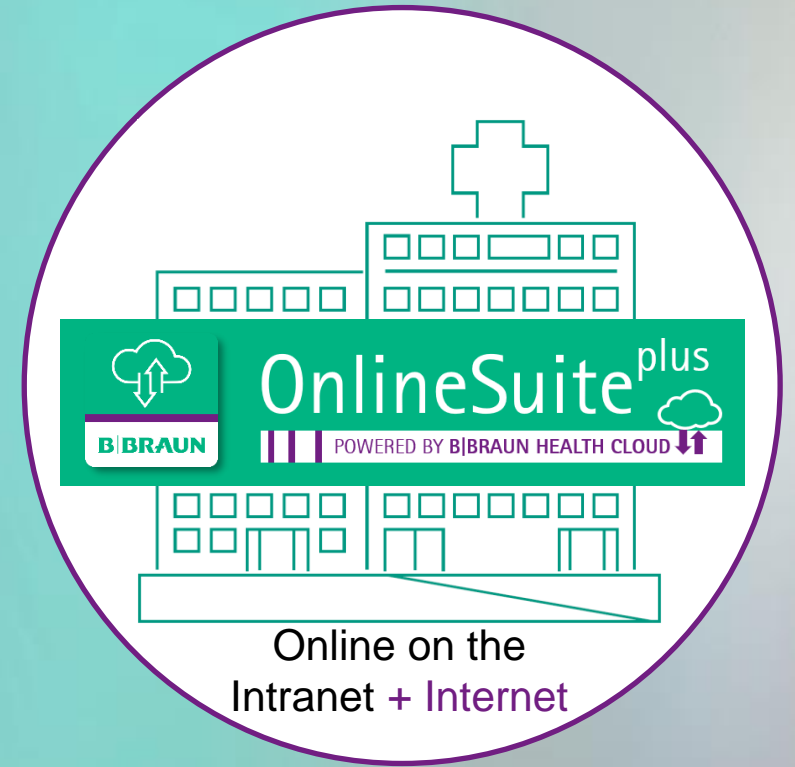


...central digital platform

The next generation of integrated infusion pump systems



+



Not just an infusion pump!

OnlineSuite^{plus}

App Store

DeviceManager^{plus}



B. Braun Health Cloud Connector



DoseLink^{plus}



Drug Library Manager^{plus}



DoseTrac^{plus}



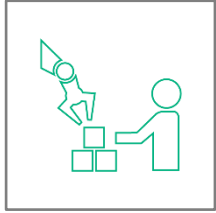
OneView^{plus}



Platform Administration

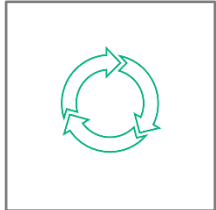


No longer wasting time with administrative tasks



Seamless process

Perform all administrative tasks related to the platform in the application!



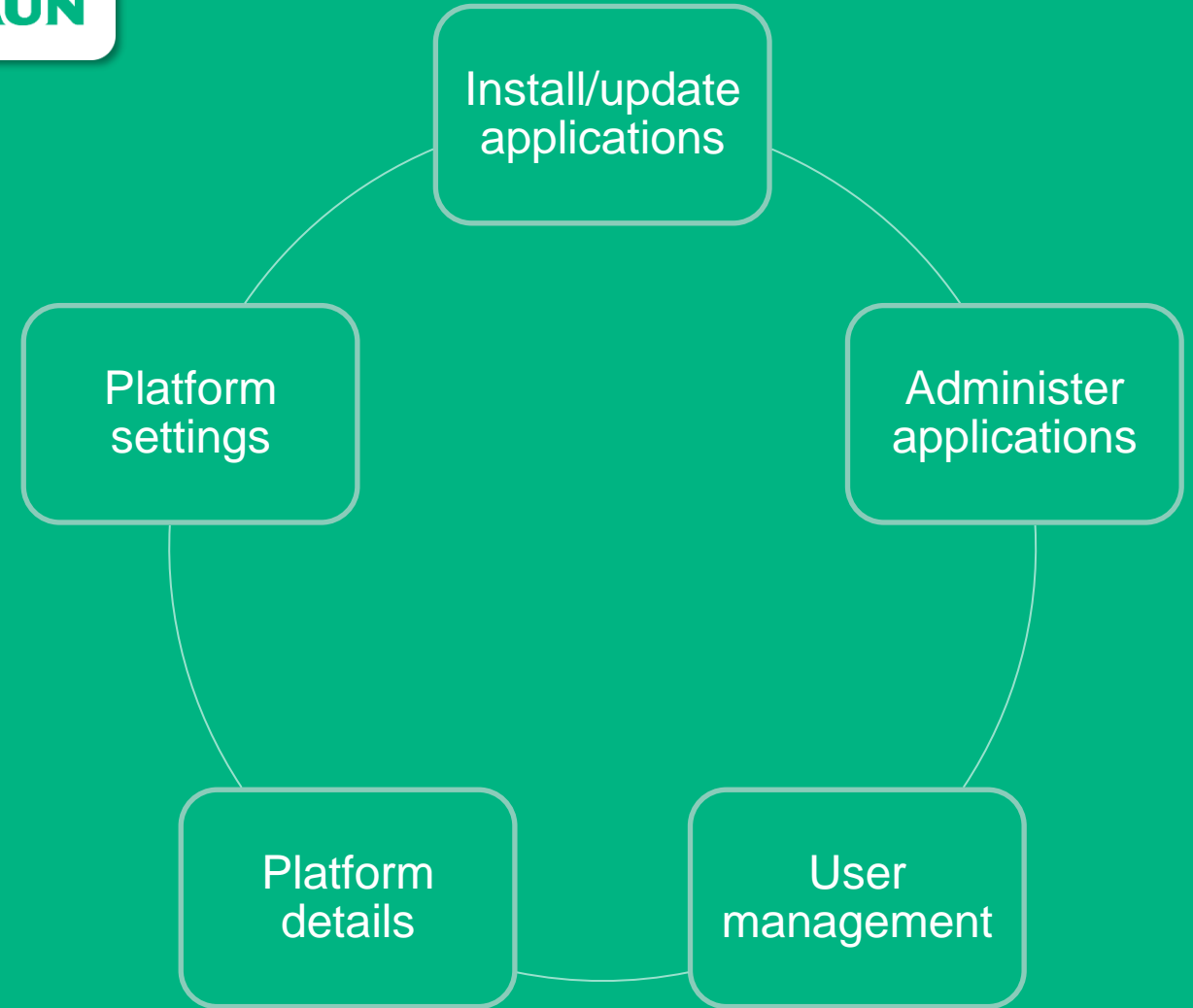
Always up to date

Keep not only the devices, but also the applications always up to date!



Full LDAP Support

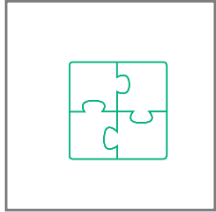
Use your Active Directory and reduce effort with Single Sign On!



DeviceManager^{plus}



Make Progress Not Miles



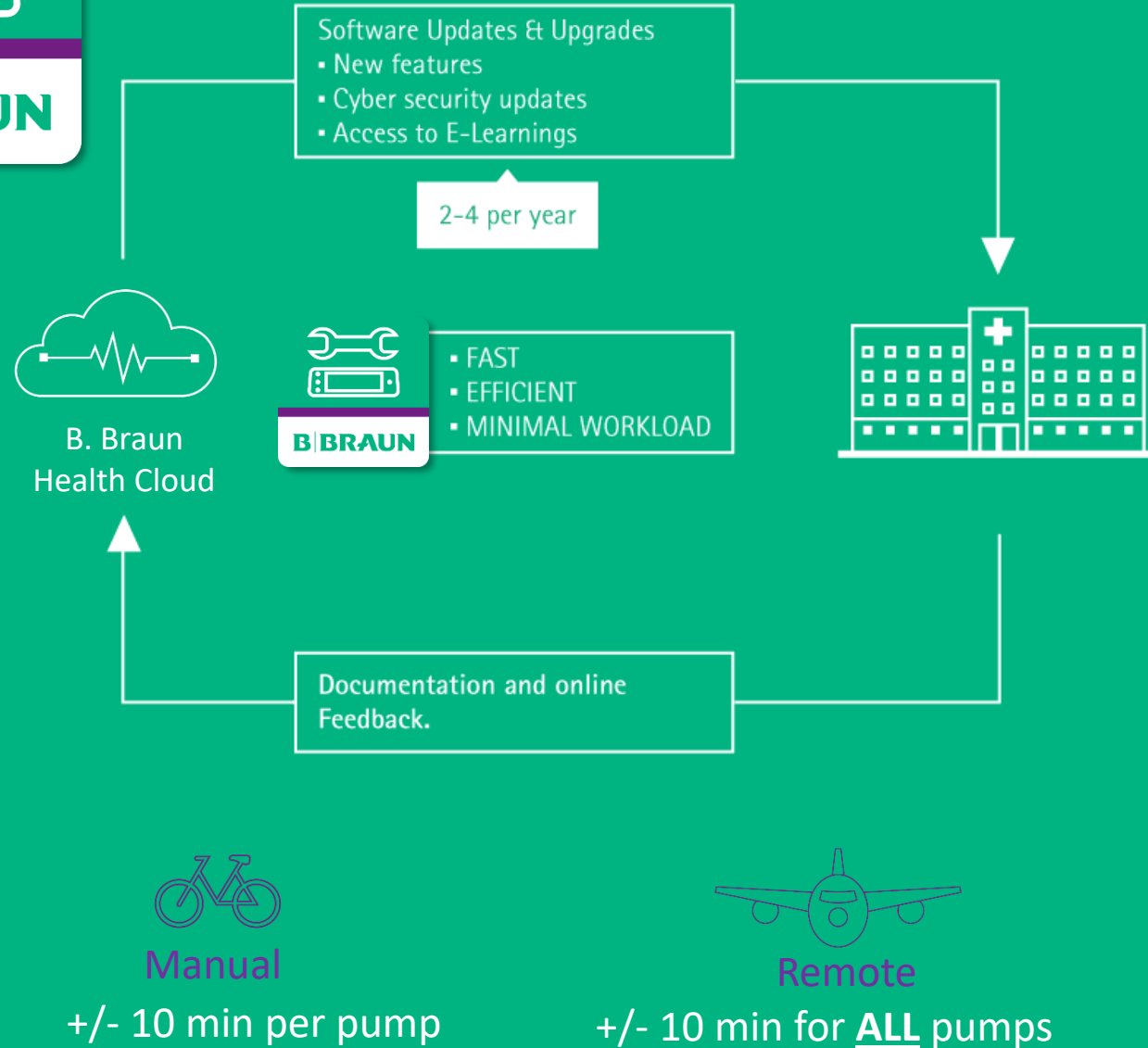
Smart Asset Management
Track your device and know all details!



Swift & Simple Data Management
Software, Drug library, configurations are always up to date!



B. Braun Health Cloud
Application is fully integrated into the B. Braun Health Cloud for instant access to new updates!

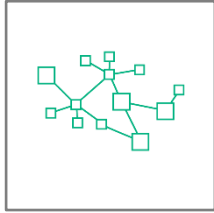


B. Braun Health Cloud Connector



Smart Technologies

Smart Hospitals



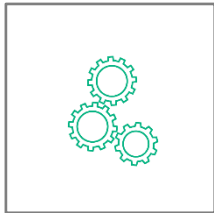
Central system

Integrate B. Braun medical devices into hospitals processes and workflows !



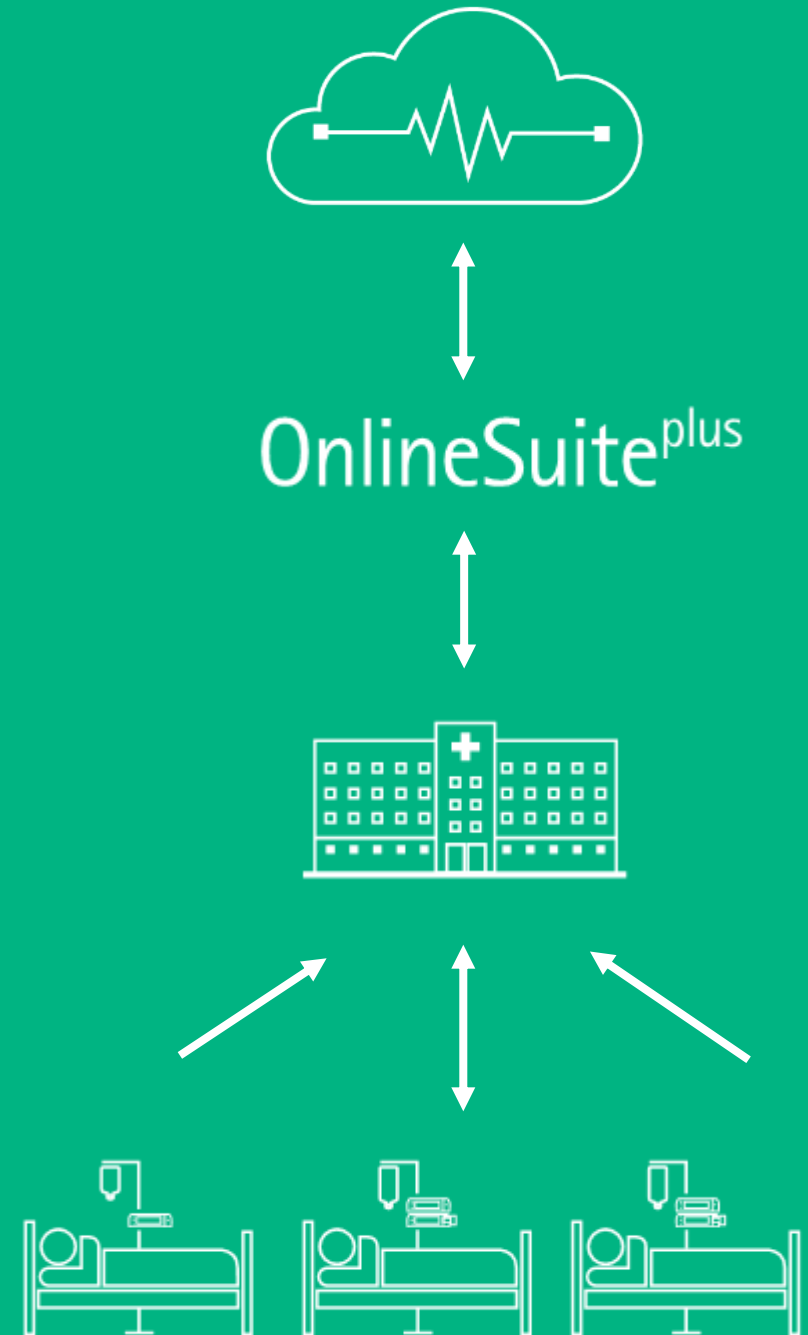
Access to latest updates!

With B. Braun Health Cloud you always access to the latest software updates for new functionalities or cybersecurity.



Fully digital process!

- Mail notification of the new update
- Automatically available in OnlineSuite^{plus}
- Online distribution via DeviceManager^{plus}

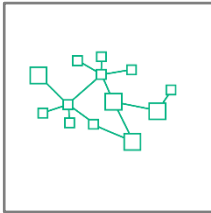


DoseLink^{plus}



Smart Technologies

Smart Hospitals



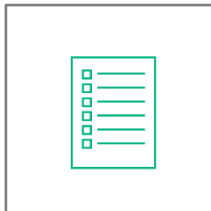
Central application for system interoperability

DoseLink^{plus} provides integration with other systems in a standardized HL7 interface, acc. to IHE standards



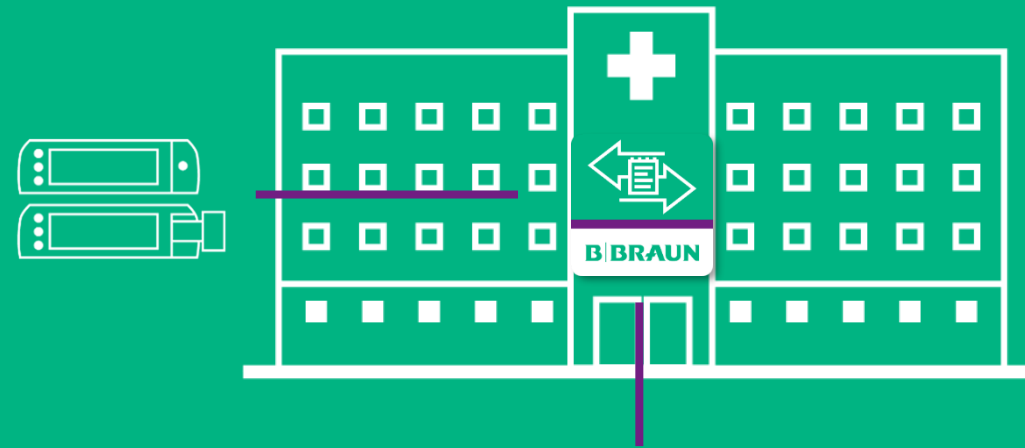
Secure interoperability

Pumps communicate with the platform with full encryption of data and acc. to digital certificates.



Seamless documentation

Therapy data is seamlessly documented in the EHR and the pumps are equipped with data buffering



AGFA Agfa
HealthCare

PHILIPS

iMDsoft

ascom

capsule
a Qualcomm Life company

Epic

Allscripts

Cerner

GE GE Healthcare

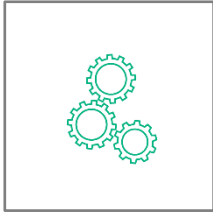
Dräger

Drug Library Manager^{plus}



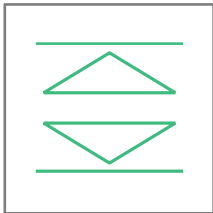
Even more performance

Even more Space



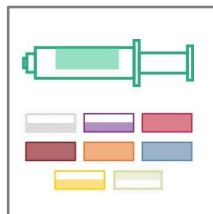
DrugLibrary Manager

Administrate and configure your drug library centrally!



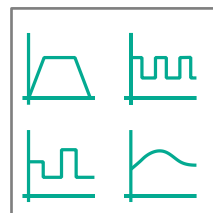
The safer. The better.

Reduces the risk of medication errors. Various drugs (max 10.000), drug categories (up to 31), patient profiles (up to 32) and specific care units (up to 31) can be programmed.



Drug color labels

International standard colors are available for different drug groups and can be flexibly assigned.

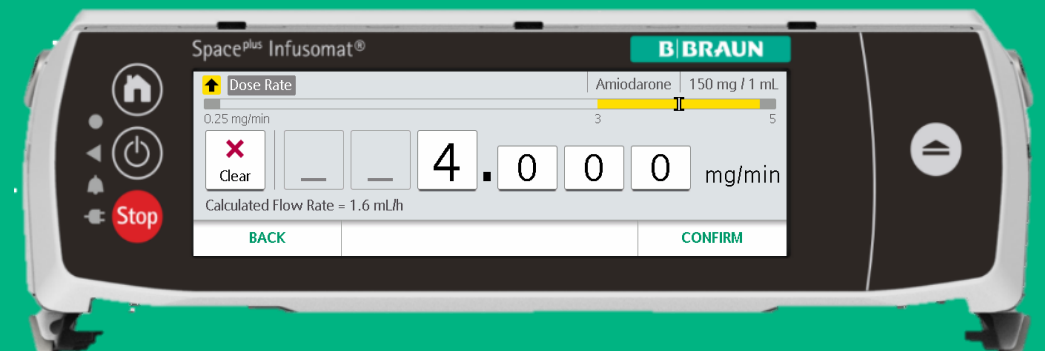
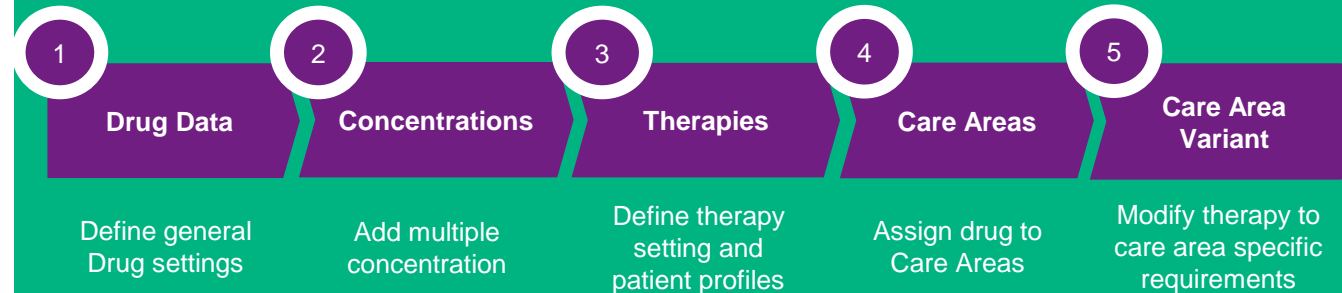


Therapy Modes – keep control.

All therapy modes are unlocked for the pump and visualized on the screen and can thus be monitored and controlled in a more targeted manner.



B | BRAUN



DoseTrac^{plus}

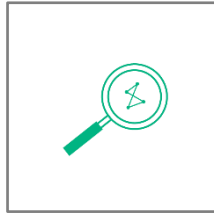


No longer searching any report data



Display history infusion data

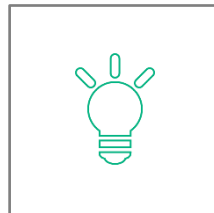
Wide range of data to help avoid potential medical errors!



Reporting & Analytics

Retrospective reporting reaching the highest level of patient safety to prevent medication errors.

- Drug library compliance
- Alarm frequency
- Soft & hard limit notifications
- Bolus reports



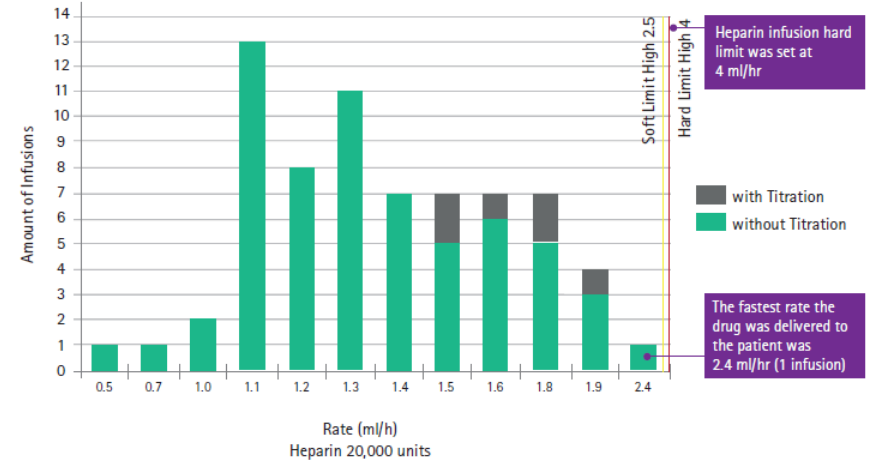
Drug database optimization

Creation of the drug database and ensuring correct application based on clinical practice.



B | BRAUN

Heparin



Drug Library Compliance per unit



OneView^{plus}



Interact with technology

Interface with life



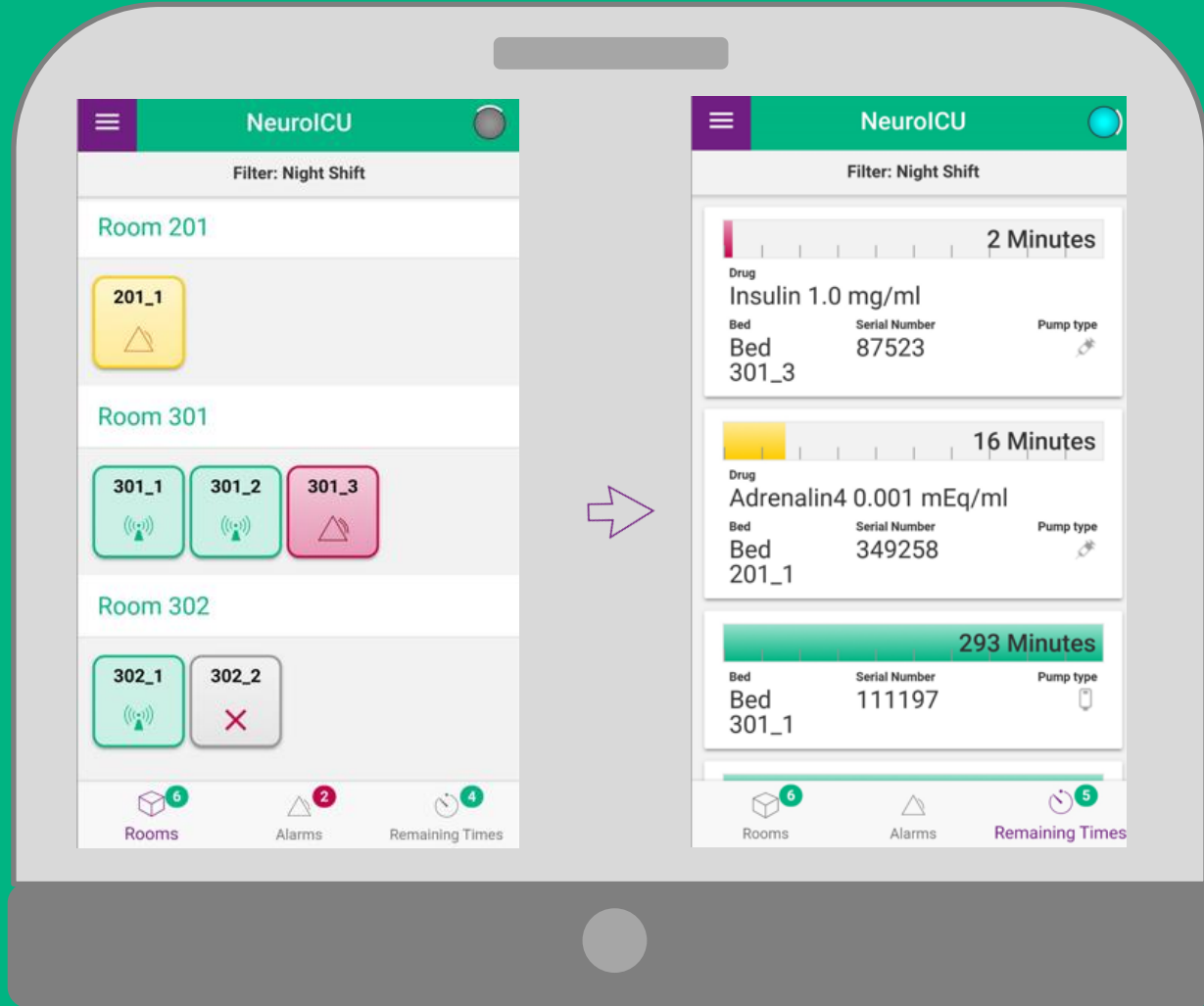
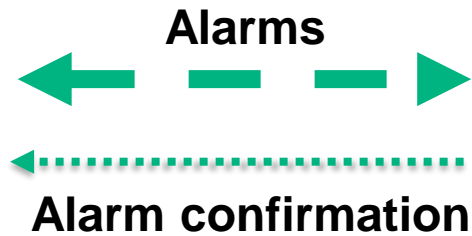
Smart Alarm Management

Display on monitors and on mobile phones.
Centrally informed about every alarms.



Silent Hospital

Keeps staff informed without audible alarms
in patient room. Less stress!



The next generation of integrated infusion pump systems

Fleet Management

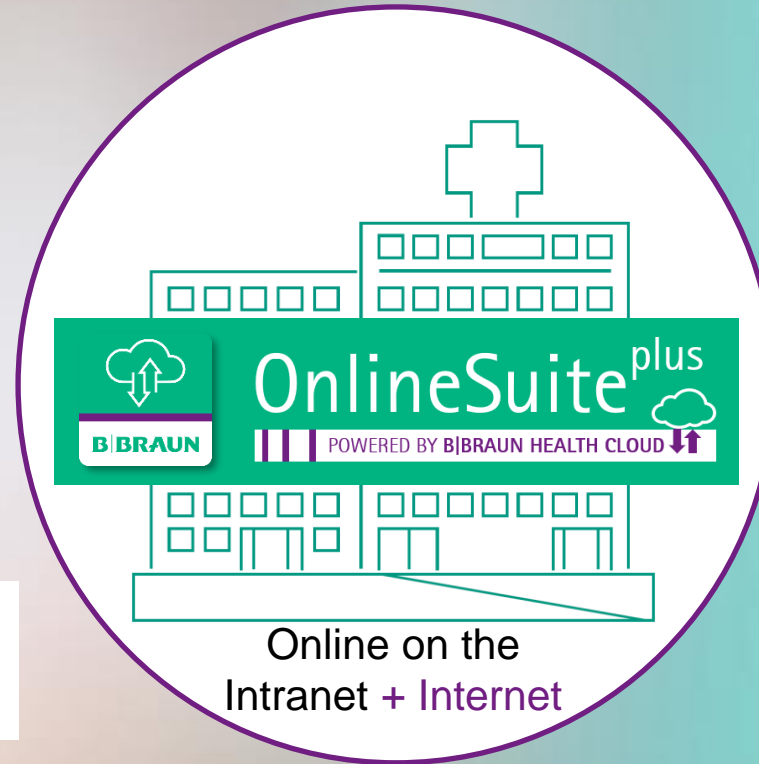
DeviceManager^{plus}

System interoperability

DoseLink^{plus}

Safe Medication Management

DrugManager^{plus}



Smart Alarm Management

OneView^{plus}

Reporting

DoseTrac^{plus}

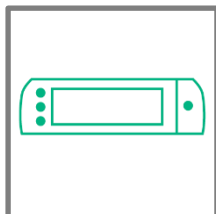
Always up-to-date!

B. Braun Health Cloud

Supported by an innovative infusion pump system



Space^{plus}



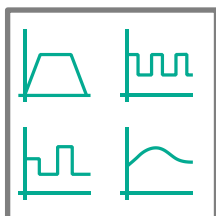
Compact and flexible concept

Space^{plus} weighs only 1,9 kg and has an integrated handle for flexible use of the system.



Resistive Touchscreen & Handling

Get in touch with a new and intuitive therapy experience. Operating feels as familiar as using your smartphone. Even with wet gloves.

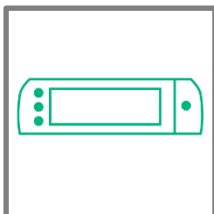


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Space^{plus}



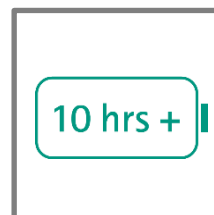
Same UI interface

To reduce training effort, Space^{plus} has the same user interface logic for volumetric and syringe pump.



No physical connectors

Spaceplus communicates with the Station via infrared. Corrosion of physical connectors are completely avoided.

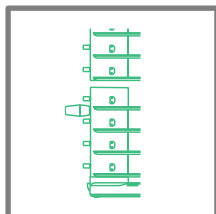


Long lasting battery

Long lasting batteries and an integrated power supply liberate care and set the staff free from inflexible wall sockets.



Station Space^{plus}



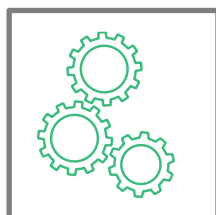
Superior workplace design

The benchmark in ergonomics: The modular system enables configurations of up to 24 pumps. Its portability mobilizes therapy.



Central audible & visual alarm

The Space^{plus} Cover centrally provides the audible and visual alarm of the pumps. Integrated brightness sensor automatically adjusts acc. to the environment.



Optimized fixation

The Station clamp is centrally placed to better bring the center of gravity closer to the IV pole. Standard mounting for vertical installation, optionally for horizontal mounting for DIN rails available.



 **Extremely safe**
Only voltage on connectors
when pump is inserted.

Connectivity Space^{plus}



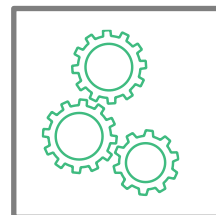
Integrated WiFi

Experience cordless care. Pumps can be connected simply via integrated WiFi or – when stacked in a Station – via Ethernet.



LAN – Ethernet connection

Optionally, a data module can be connected at the bottom of the Station to set up a LAN connection.



Communication to the Data module

Space^{plus} pumps automatically recognize the data module to set up the communication automatically.



HDMI

Data module is equipped with HDMI connection for future-oriented connection options.

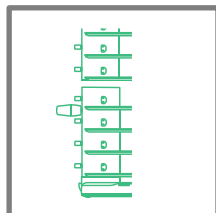


Design your workplace



Stand-alone - Transport

Space^{plus} pumps can be easily stacked to each other for attachment to an IV pole or for transport.



Docking station

Space^{plus} pumps can be inserted and taken out of the Station w/o interruption of running therapy.



MRI

The Space^{plus} MRI Station supports an infusion therapy for one patient at a time during MRI examinations w/o artifacts.

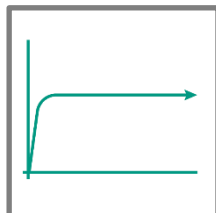


Accurate & Safe



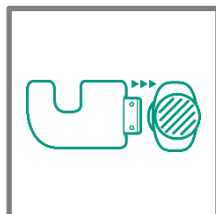
IP44 Moisture Protection

The pump is protected from moisture and splashing water – no matter what



Delivery accuracy

- Syringe pump +/- 2%
- Volumetric pump +/- 3%



Freeflow is reliably prevented

The unique and patented syringe piston brake prevents freeflow and handling mistakes during syringe change.



Space^{plus} Perfusor – Inserting syringe



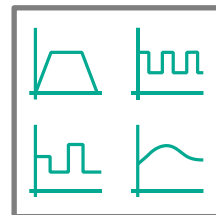
PATENTED

Disposable Portfolio



In-house production

Infusion therapy has been one of the focus areas of B.Braun for > 75 yrs and has all production sites worldwide spread under own high quality management requirements.



A wide range of dedicated disposables

Standard, SafeSet, Light protected, NRFit, ENFit, Flushing Set, Transfusion
2 mL – 50/60 mL syringes

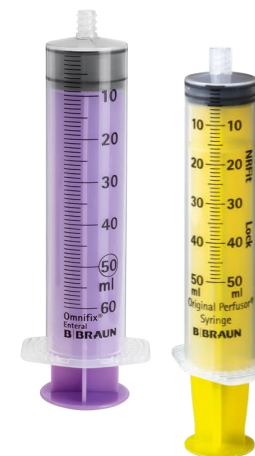


Sustainable & safe raw materials

Safe raw materials are always used for the production of our systems, in which sustainability is also one of our priorities.



Standard syringes



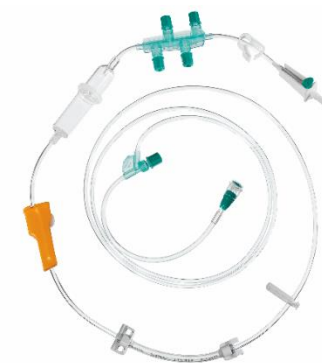
Therapy specific syringes



Extension line



Standard IV-set



Oncology infusion set



Enterale infusion set

Disposable Portfolio

Omnifix® Syringes



Original Perfusor® Syringes



Omnifix® Enteral



Original Perfusor® Syringe NRFit®



Original Perfusor® Syringe UV-protect



PVC FREE



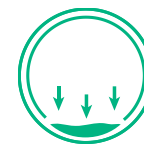
HIGH CONTRAST GRADUATION



HIGHLY TRANSPARENT BARREL



LUER LOCK TO AVOID MIS-CONNECTIONS



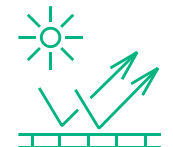
REDUCED RESIDUAL VOLUME



NRFit & ENFit VERSIONS



PISTON STOP



UV PROTECT

Disposable Portfolio

Original Perfusor® Line
PE with colored tube



Original Perfusor® Line
PE with colored tube



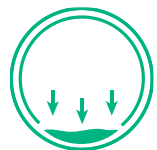
Original Perfusor® Line
PE with colored tube



Original Perfusor® Line
PVC (DEHP-free)



Original Perfusor® Line
with Sterifix® Filter



REDUCED
RESIDUAL
VOLUME



2 BAR PRESSURE
RESISTANCE



DIFFERENT
TUBE MATERIALS



DEHP-
FREE



LUER LOCK
TO AVOID MIS-
CONNECTIONS

Disposable Portfolio

Original Perfusor® Line
NRFit®



Original Perfusor® Line
ENFit™



Original Perfusor® Line
UV-protect



NRFit®
ENFit™



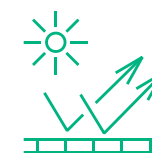
2 BAR PRESSURE
RESISTANCE



DIFFERENT
TUBE MATERIALS



DEHP-
FREE



Disposable Portfolio

Infusomat® Space Line
with integrated Sterifix® Filter



Infusomat® Space Line
SafeSet



Infusomat® Space Line
UV-protect



Infusomat® Space Line
NRFit®



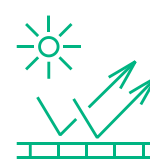
BACTERIA
PROOF VENTING



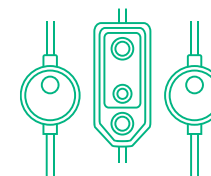
DIFFERENT
TUBE MATERIALS



DEHP-
FREE



UV-
PROTECTION

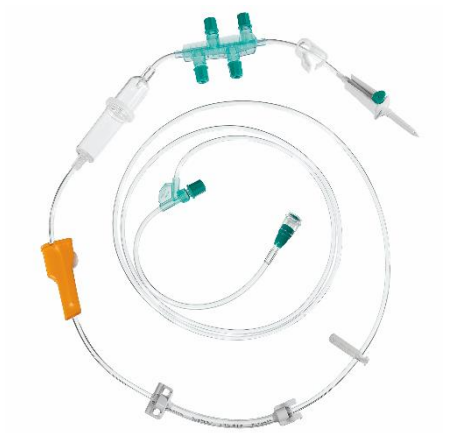


DIFFERENT
FILTERS



Disposable Portfolio

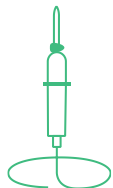
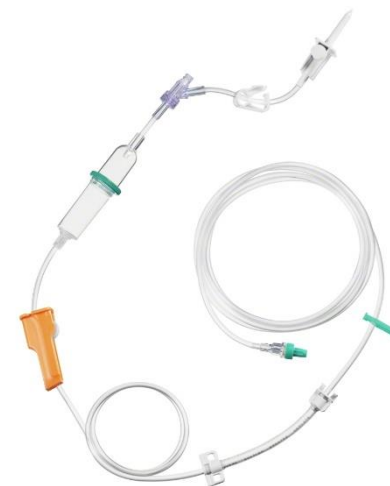
Cyto-Set® Infusomat®
Space Line



Infusomat® Space Line
ENFit®



Infusomat® Space Line
SafeSet Flushing Set



SHARP SPIKE FOR
EASY PIERCING



BACTERIA
PROOF VENTING



DIFFERENT
TUBE MATERIALS

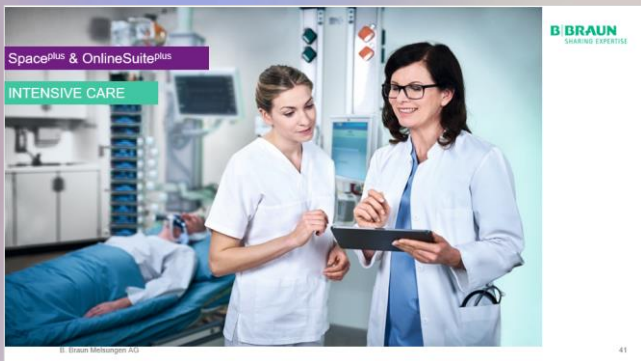


DEHP-
FREE



Space^{plus} & OnlineSuite^{plus}

Supports all departments within your hospital

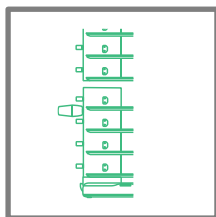


Space^{plus} & OnlineSuite^{plus}

INTENSIVE CARE



Space^{plus} & OnlineSuite^{plus}

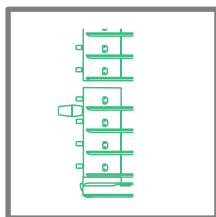


Superior workplace design

The benchmark in ergonomics: The modular system enables configurations of up to 24 pumps. Its portability mobilizes therapy.

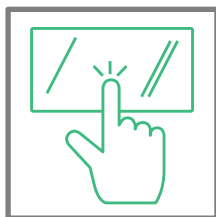


Space^{plus} & OnlineSuite^{plus}



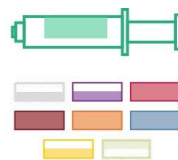
Superior workplace design

The benchmark in ergonomic: The modular system enables configurations of up to 24 pumps. Its portability mobilizes therapy.

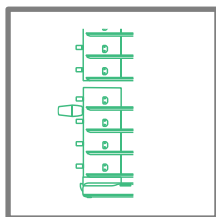


Touchscreen & Handling

Intuitive user interface with all essential therapy data at a glance, including drug colors labels.

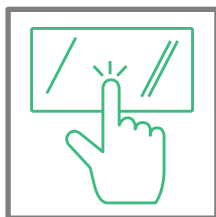


Space^{plus} & OnlineSuite^{plus}



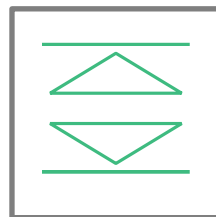
Superior workplace design

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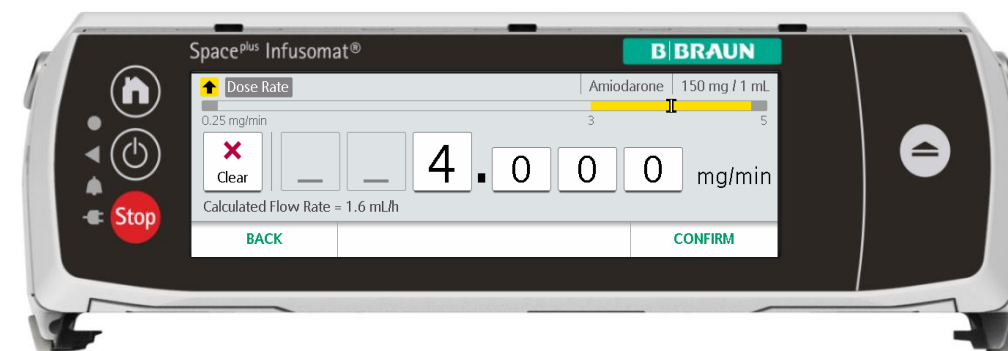
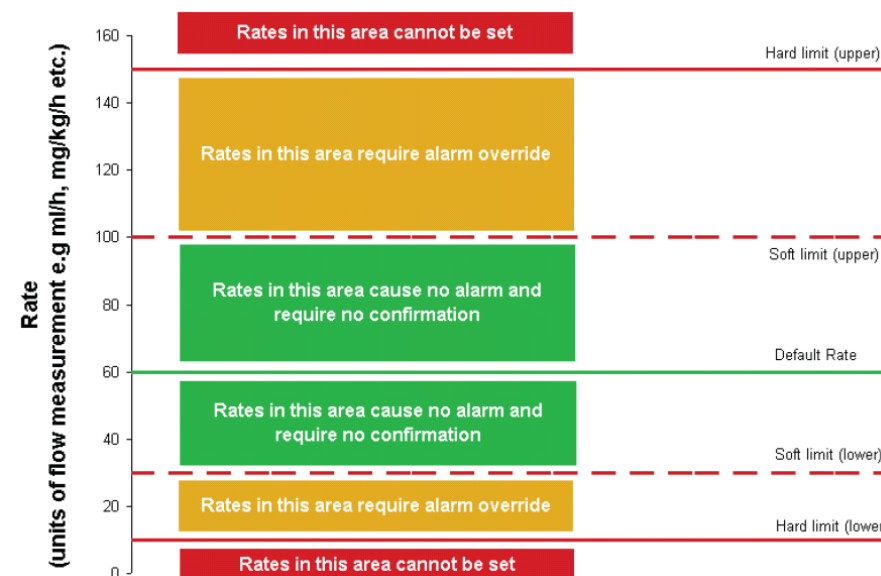
Touchscreen & Handling

Intuitive user interface with all essential therapy data at a glance, including drug colors labels.



DoseGuard – The safer. The better.

DoseGuard reduces the risk of medication errors. Various drugs, drug categories and specific care units can be programmed.



Alarm Management



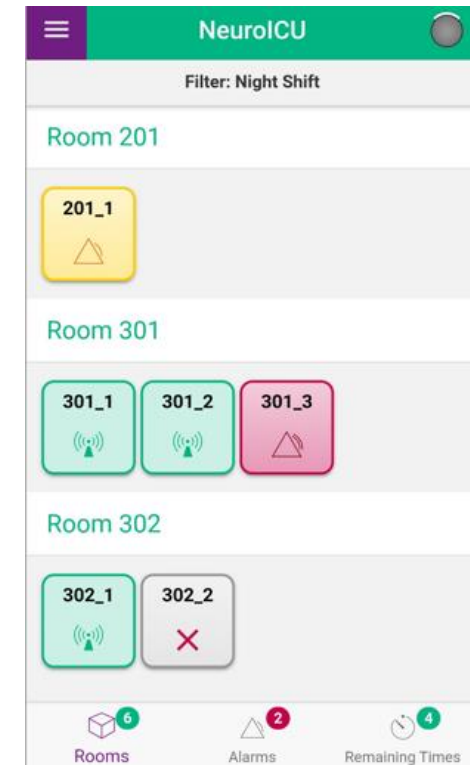
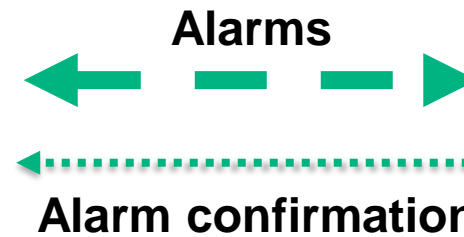
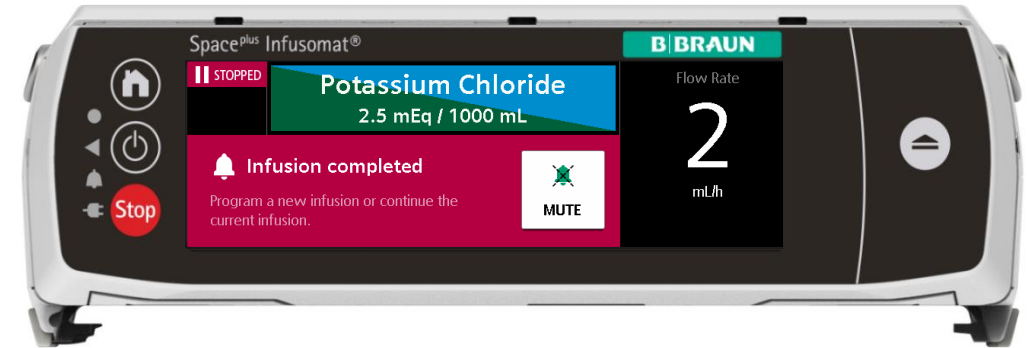
Drug name always visible
During therapy, in standby or in case of alarm?
Yes, the drug name is visible at all times.



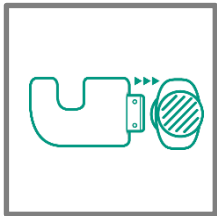
Smart Alarm Management
Every alarm with the cause is displayed on monitors or on mobile phones.



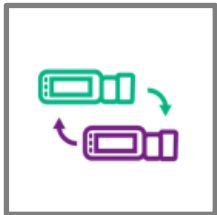
Silent hospital approach
Space^{plus} makes it possible. Alarms can be suppressed in case of confirmed distributed alarm management.



Accurate Medication Management



Precise drive & peristalsis
Rethink rigor in drug administration. Both, Perfusor and Infusomat feature a totally re-designed drive and peristalsis technology.



Administration of Inotrops – Take Over Mode
Reduce interruption of delivery of drugs with short half-life with the automatic syringe change to keep the blood pressure constant.



Seamless therapy data into EMR
Connection to EMR are seamless via standardized HL7 / IHE interface. Wifi and data buffering makes the system very flexible.



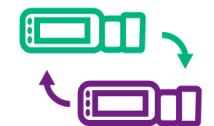
Centralized alarms & volume



Synchronization of patient data



Centralized data stream



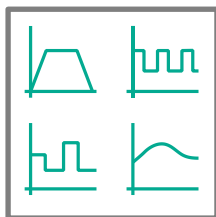
Take-over-mode

Space^{plus} & OnlineSuite^{plus}

OR & Recovery

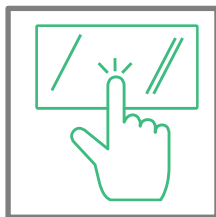


Space^{plus} & OnlineSuite^{plus}



One pump for all therapies

Continuous, Enteral, TCI or PCA?
Space^{plus} supports all therapies.



Reduce workload

Synchronization of patient related data within
the Station.

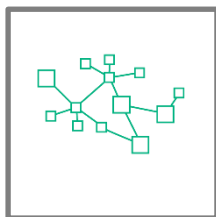


Seamless therapy data into EMR

Connection to EMR are seamless via
standardized HL7 / IHE interface. Wifi and data
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Target Controlled Infusion



Multiple algorithms available

Space^{plus} supports a wide range of algorithms that are fully configurable in the Drug LibraryManager^{plus} to reduce handling steps.



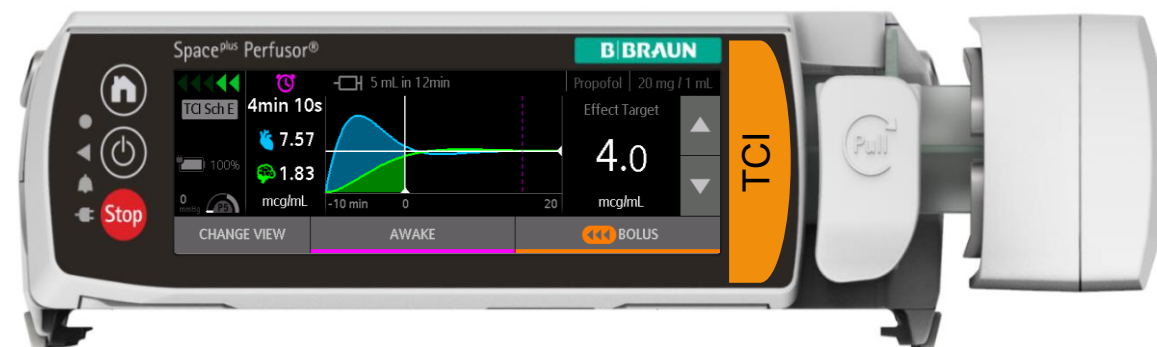
Graphical visualization

The large color screen displays the therapy in full graphics. Titration of the target can be done very quickly and is immediately graphically visible.

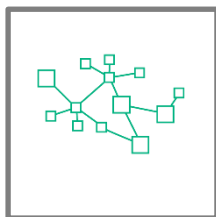


Awake – one click to wake up the patient

Terminate anaesthesia? Press “awake” and the target will automatically be set to 0. Concentration reduction remains graphically visible with wake-up time indication.



Patient Controlled Analgesia



PCA profiles

Space^{plus} supports PCA, PCEA, IPCA and PIEB. All profiles are to configured in the Drug LibraryManager^{plus}.



Graphical visualization

The large color screen displays the A/D ratio in full graphical form.



Lockbox

Space^{plus} has a PCA lockbox to prevent tampering the drugs.



Data lock

Extra data locks to give respective access / rights to special pain team.

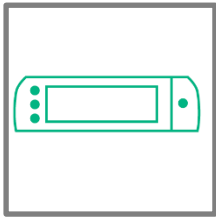


Space^{plus} & OnlineSuite^{plus}

Oncology



Space^{plus} & OnlineSuite^{plus}



Small & Intuitive

Space^{plus} is very small and can be easily attached to a vertical / horizontal IV pole / DIN rail.



Medication safety

DoseGuard™ is the function to define limit ranges to reduce medication errors. Next step is the possibility of closed loop medication management.



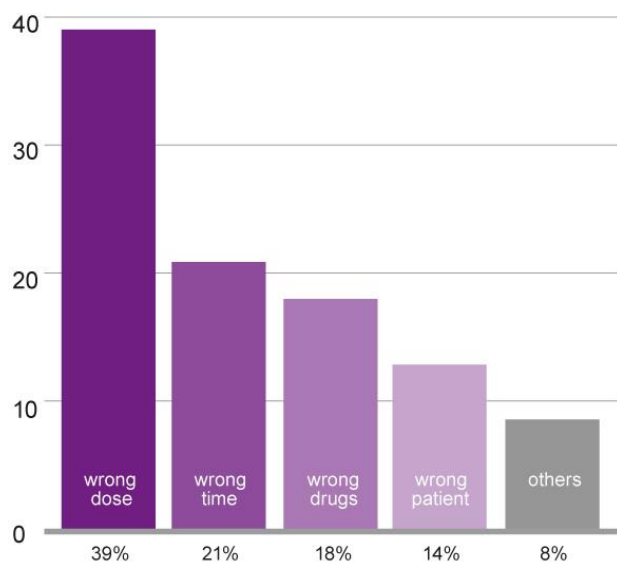
Silent hospital approach

To reduce alarm fatigue as well as to give patient the necessary rest during administration of chemotherapy.



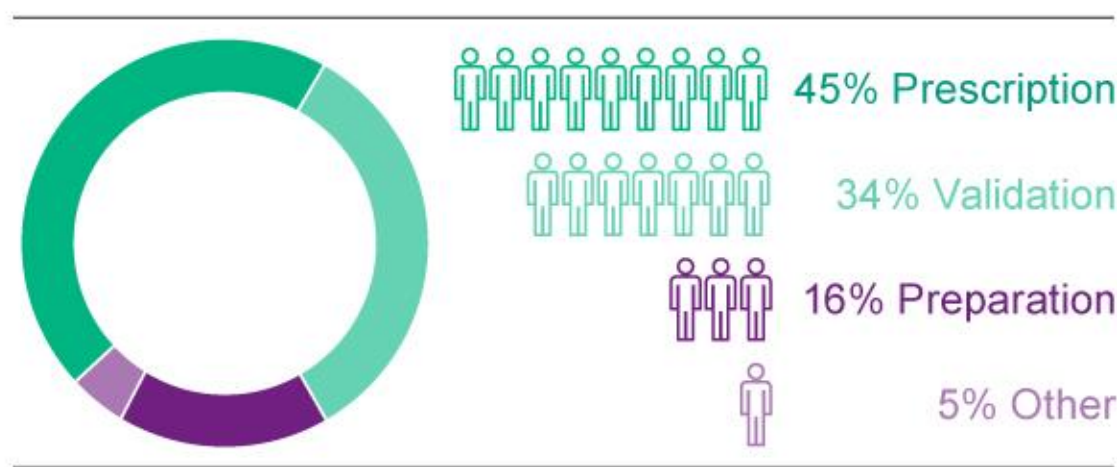
Smart Chemotherapy Management

PREVENT MEDICATION ERRORS



Medication errors in chemotherapy^{1,2}

REASONS FOR MEDICATION ERRORS



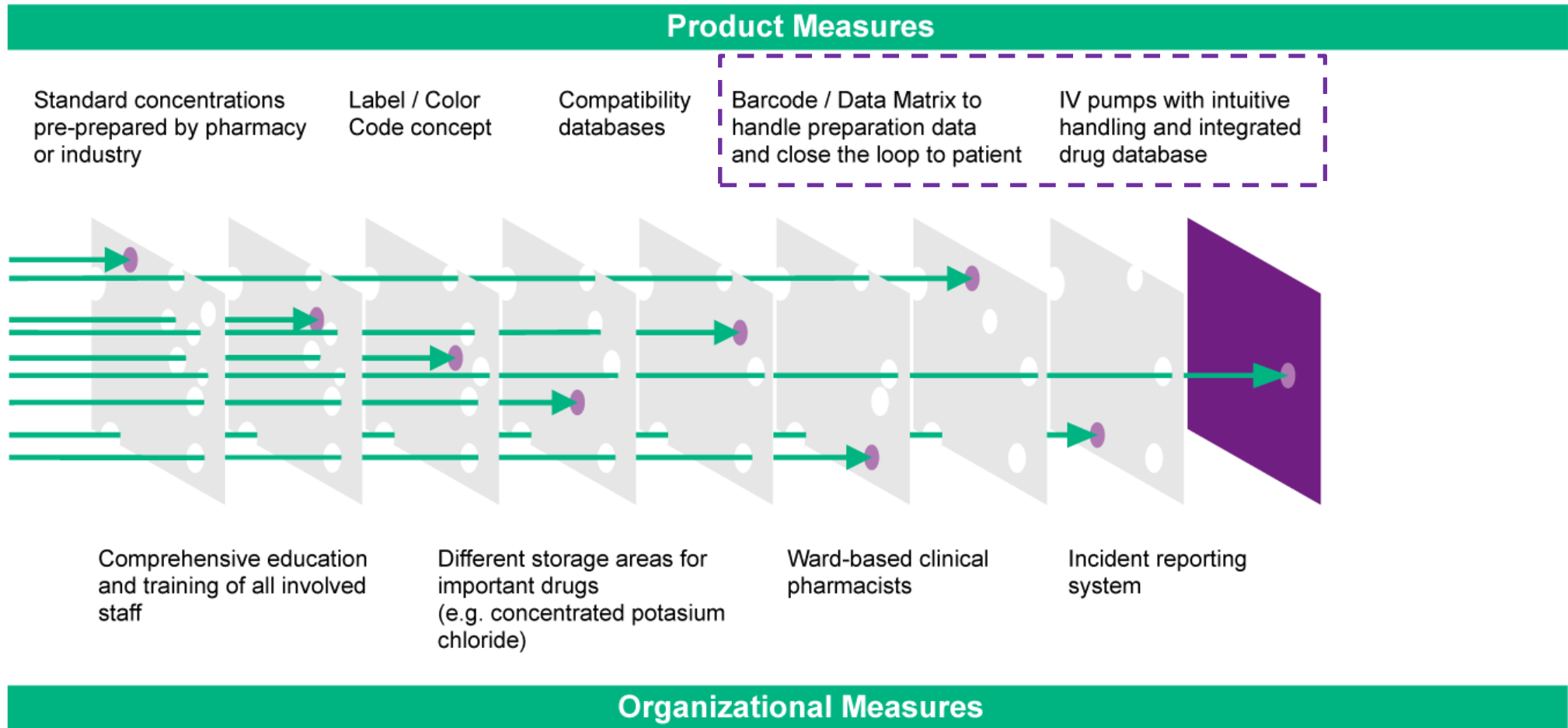
88% of the errors were detected in the day hospital while 12% reached the patient.³

1 Ford et al (2006): Study of Medication Errors on a Community Hospital Oncology Ward. Journal of Oncology Practice, 2006, 2 (4), 149-154. available at: <https://ascopubs.org/doi/full/10.1200/jop.2006.2.4.149>; accessed 05-06-2019.

2 Schulmeister L (1999): Chemotherapy medication errors: descriptions, severity, and contributing factors. Oncol Nurs Forum. 1999 26(6): 1033-42

3 Villar J, et al. Errores asociados con la prescripción, validación, preparación y administración de medicamentos citostáticos. Farmacia hospitalaria: órgano oficial de expresión científica de la Sociedad Española de Farmacia Hospitalaria. 2008; 32(3):163-169.

Smart Chemotherapy Management

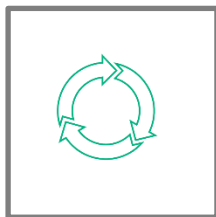


Smart Chemotherapy Management



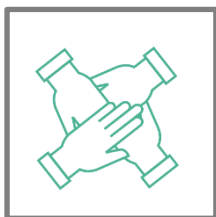
Closed Loop Medication Management

Space^{plus} supports bi-directional communication (AutoProgramming), meaning not only sends out data for documentation but also receives therapy order.



AutoProgramming

Digital process to support barcode scanning for therapy validation, patient identification, therapy related infusion data and documentation.



Partners in smart chemotherapy

Already with the Space generation, there were close collaboration with various partners.

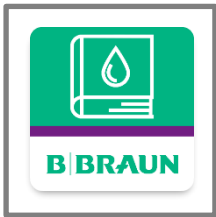


Space^{plus} & OnlineSuite^{plus}

PHARMACY

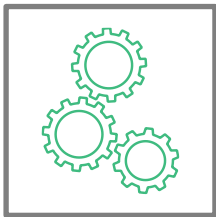


Medication Management



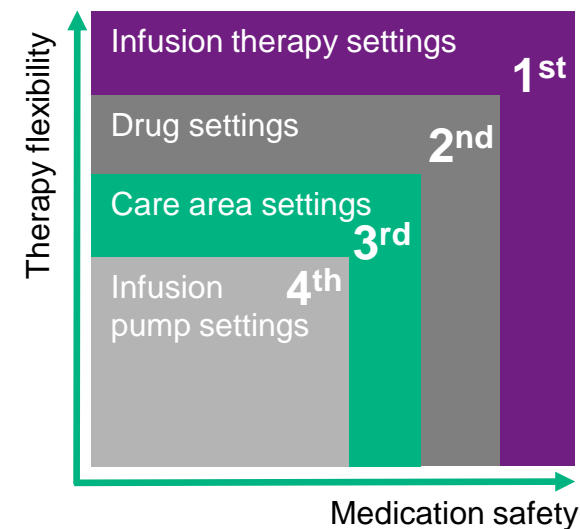
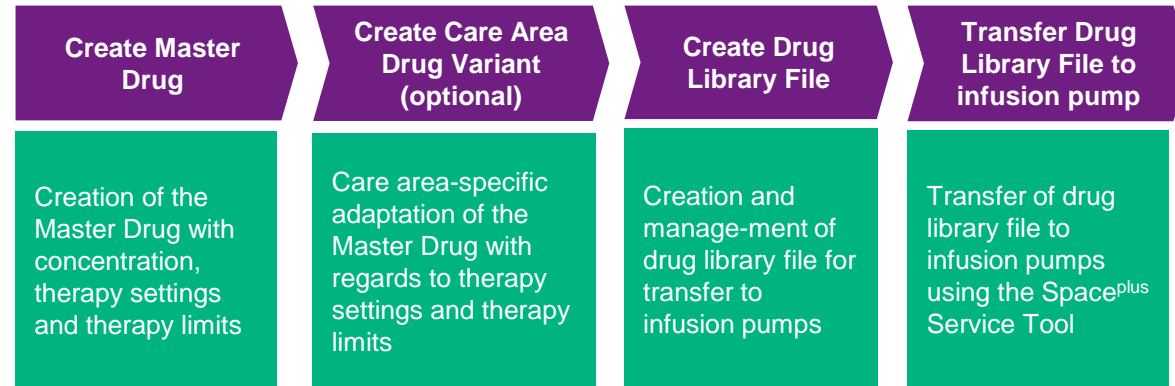
DrugLibrary Manager

Administrate your medication data centrally and configure your drug library adapted to every ward / even patient profile. Collaboration platform for hospital medication safety team



Configuration settings per care area

Certain departments, medication or therapies require specific settings regarding pressure, KVO rates, patient limits etc. This can be managed centrally.

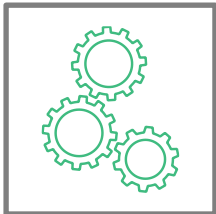


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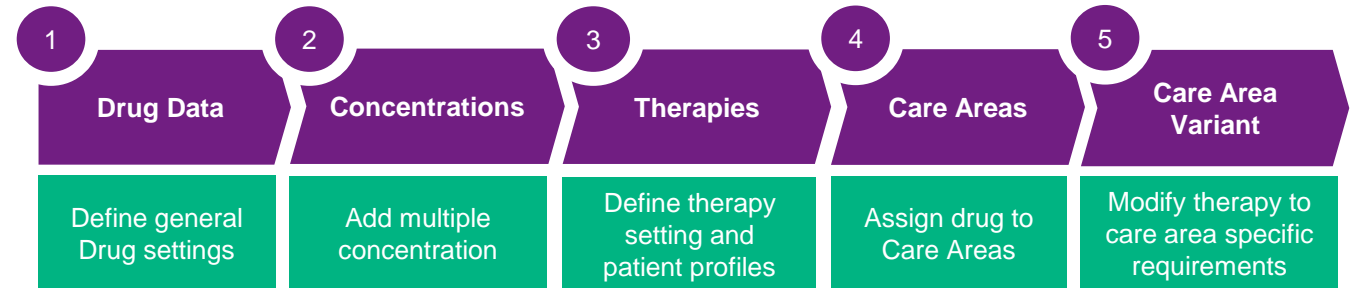
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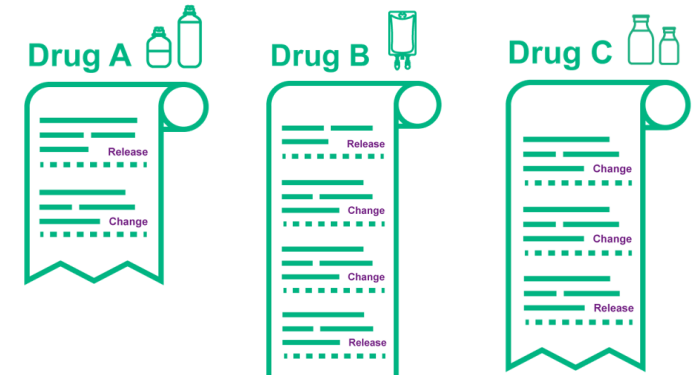


Automatic validation process

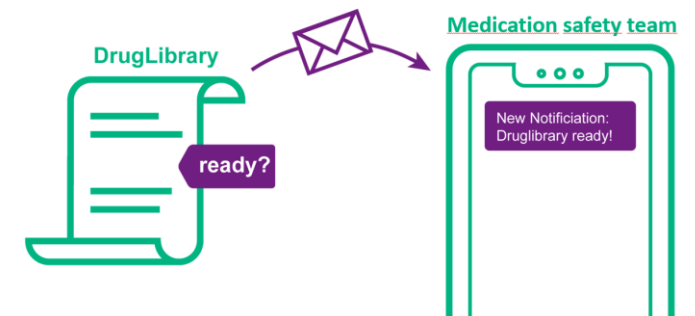
Adding or adjusting a medication setting is fully supported by a validation process. Every change is documented.



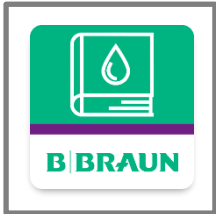
Unlimited change / release history per drug



Automatic notifications for released / ready DrugLists

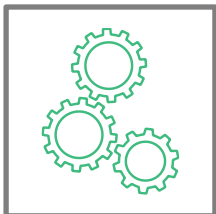


Medication Management



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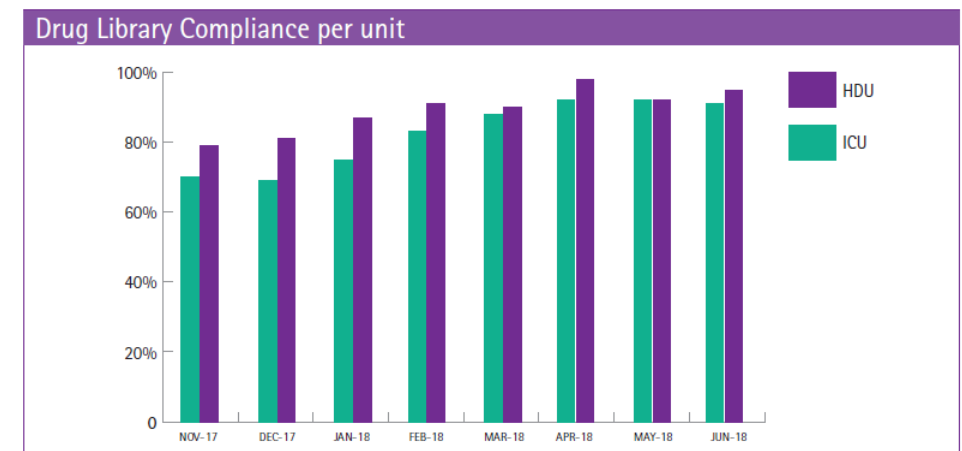
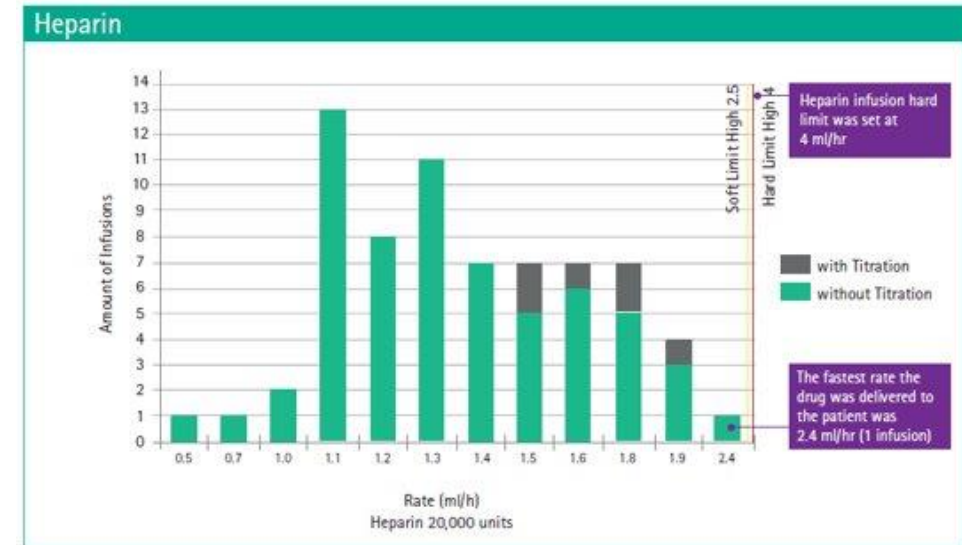
Automatic validation process

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Compliance reporting

DoseTrac^{plus} provides insights into how the drug library is used in order to optimize the drug library.



Space^{plus} & OnlineSuite^{plus}

BIOMEDICAL DEPARTMENT

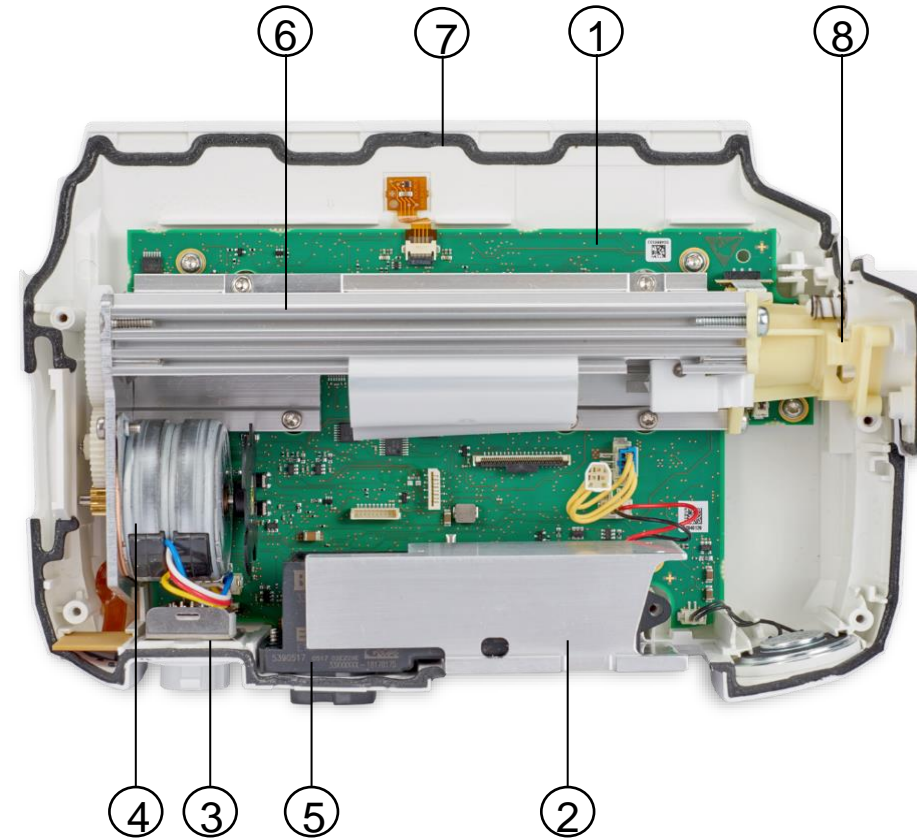


System construction



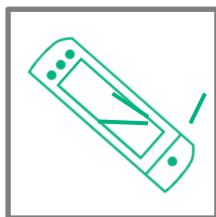
Reliable and rigid Construction

Oops! Fallen? The pump – especially the drive arm – is designed to withstand the challenges of everyday life.



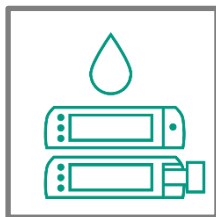
- ① Electronics stored underneath top cover
- ② Integrated Wi-Fi
- ③ No soldered connections to accessory plug
- ④ New drive head & drive housing
- ① Integrated power supply integrated
- ② New and optimized aluminium drive mechanism
- ③ Improved sealing
- ④ Improved contour & sealing of drive arm

System construction



Reliable and rigid Construction

Oops! Fallen? The pump – especially the drive arm – is designed to withstand the challenges of everyday life.



IP44 Moisture Protection

The pump is protected from moisture and splashing water – no matter what.



System construction



Reliable and rigid Construction

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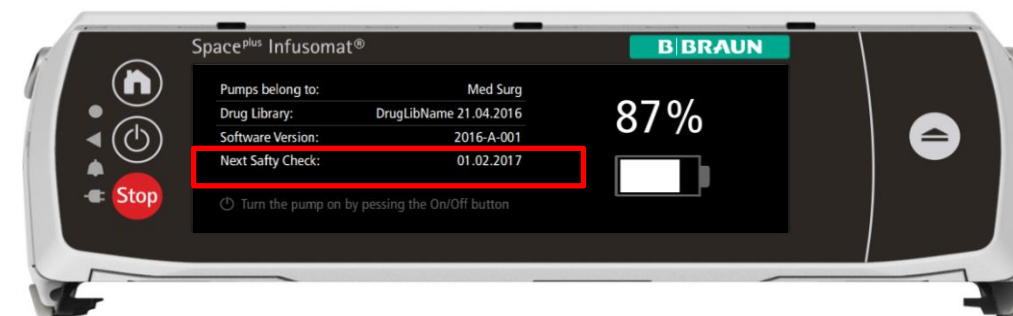
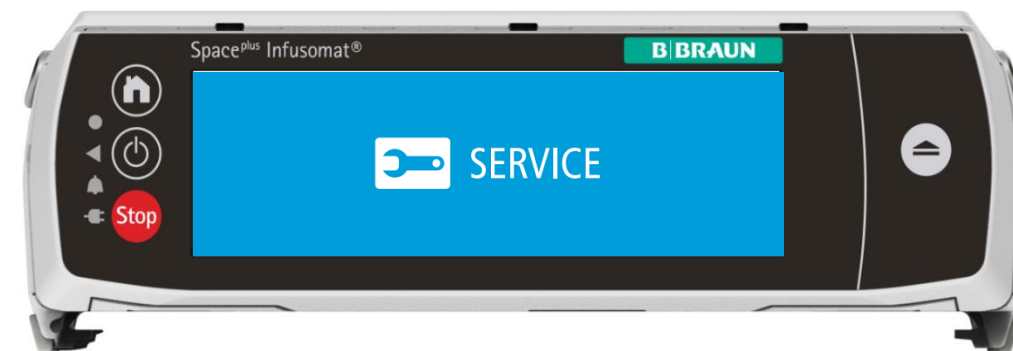
IP44 Moisture Protection

The pump is protected from moisture and splashing water – no matter what.



Efficient technical safety check

TSC is required every 24 months w/o opening the pump and preventive replacement of parts (Battery > 6 yrs). User will automatically get a pop-up.



TSC information on pump
Pop-up information

B BRAUN Sicherheitstechnische Kontrolle (STK)	
nach Servicemanual Version 0.5 (Kopiervorlage – Gerätedokumentation beifügen)	
Checkliste für Sicherheitstechnische Kontrolle – alle 24 Monate	Betreiber
Gerät: Space ^{plus} Perfusor [®] Hersteller: B. Braun Melsungen AG	
Servicemanual und Gebrauchsanweisung beachten. Alle Messwerte dokumentieren. Verwendetes Zubehör in Prüfung mit einbeziehen. Nur kalibrierte Messmittel verwenden.	Ausschaffungsjahr

Make progress – No miles



Central management

With **DevicerManager^{plus}** you will manage all infusion pumps in a central digital platform.



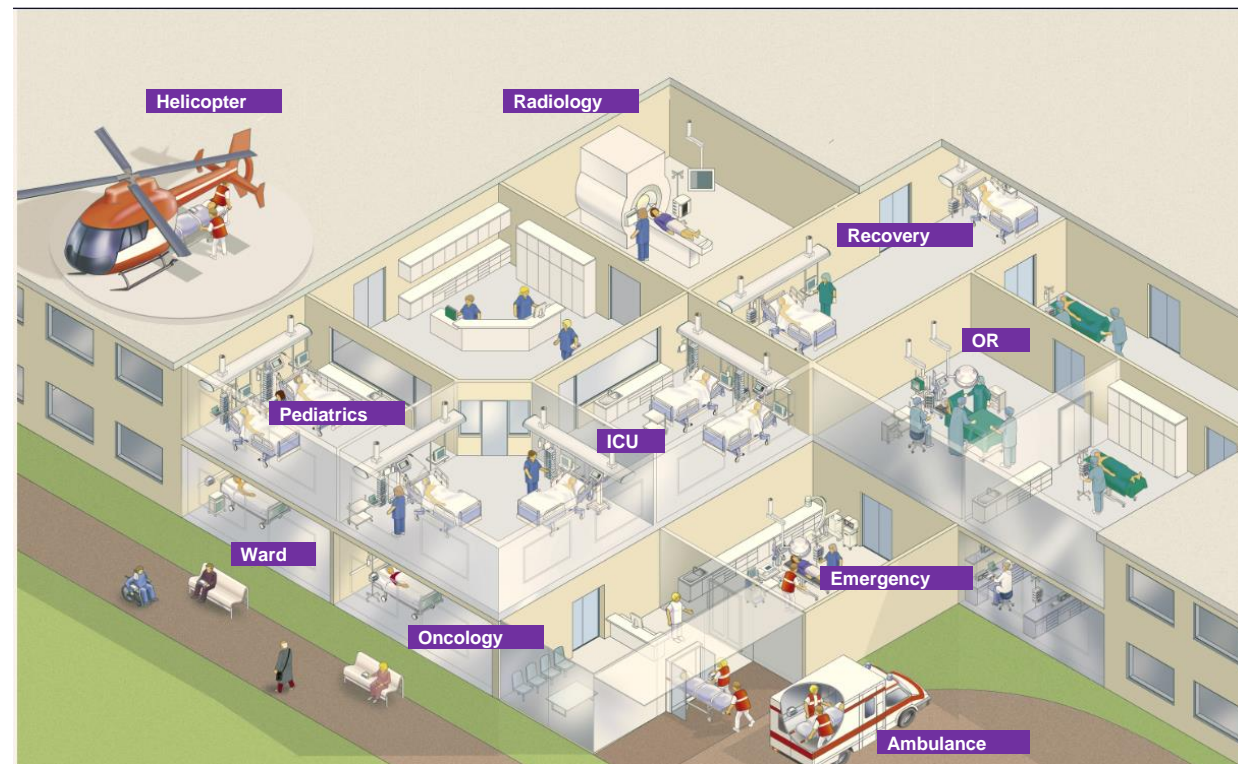
Swift & Simple Data Management

Software, Drug library, configurations are always up to date!



Track & Trace

Localization is an important part where the **DeviceManager^{plus}** will support you with Wifi triangulation.



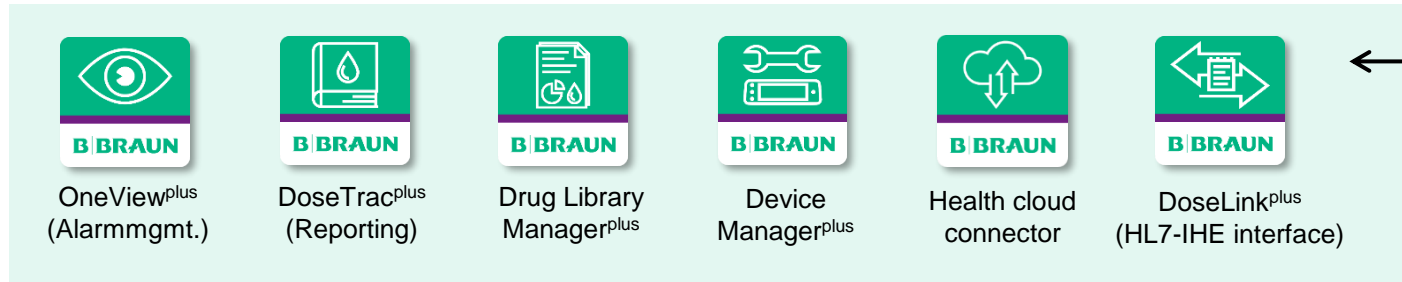
Space^{plus} & OnlineSuite^{plus}

IT

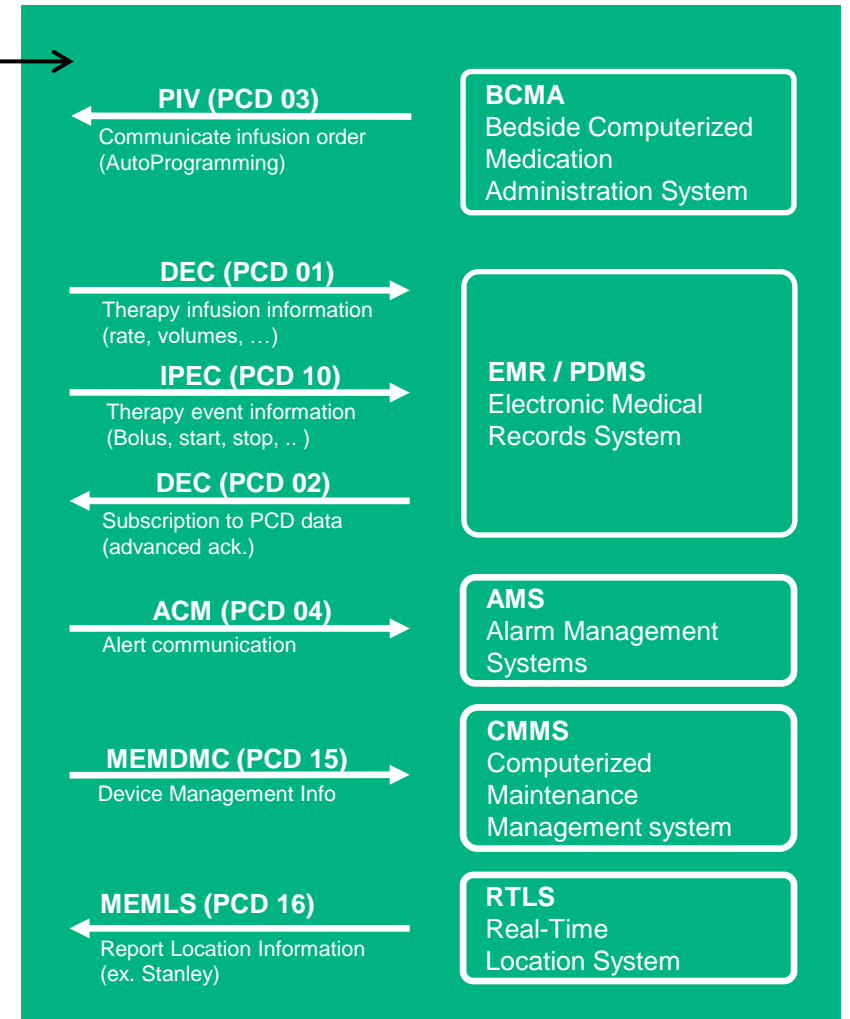
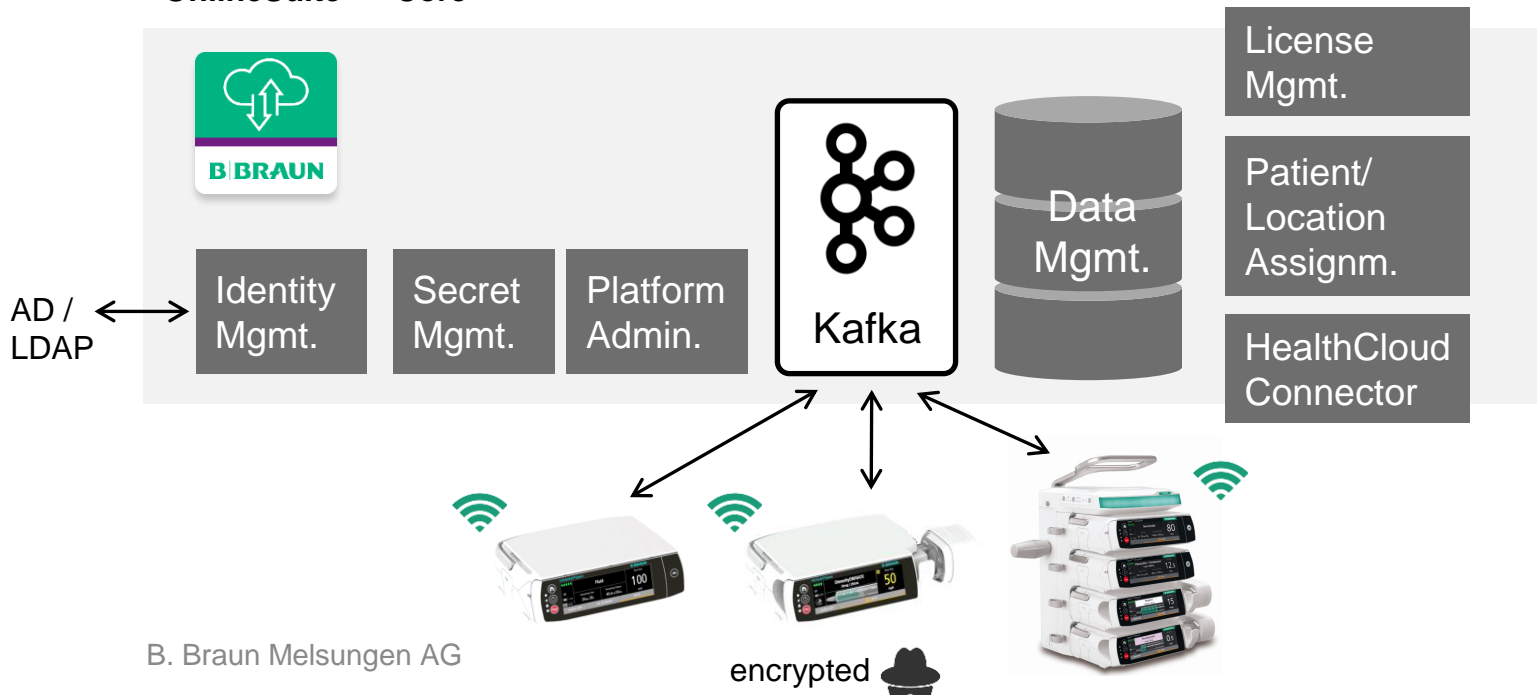


System Architecture

OnlineSuite^{plus} Apps



OnlineSuite^{plus} Core



Cybersecurity



Data encryption

Communication between Space^{plus} and OnlineSuite^{plus} is fully encrypted and secured with digital signatures



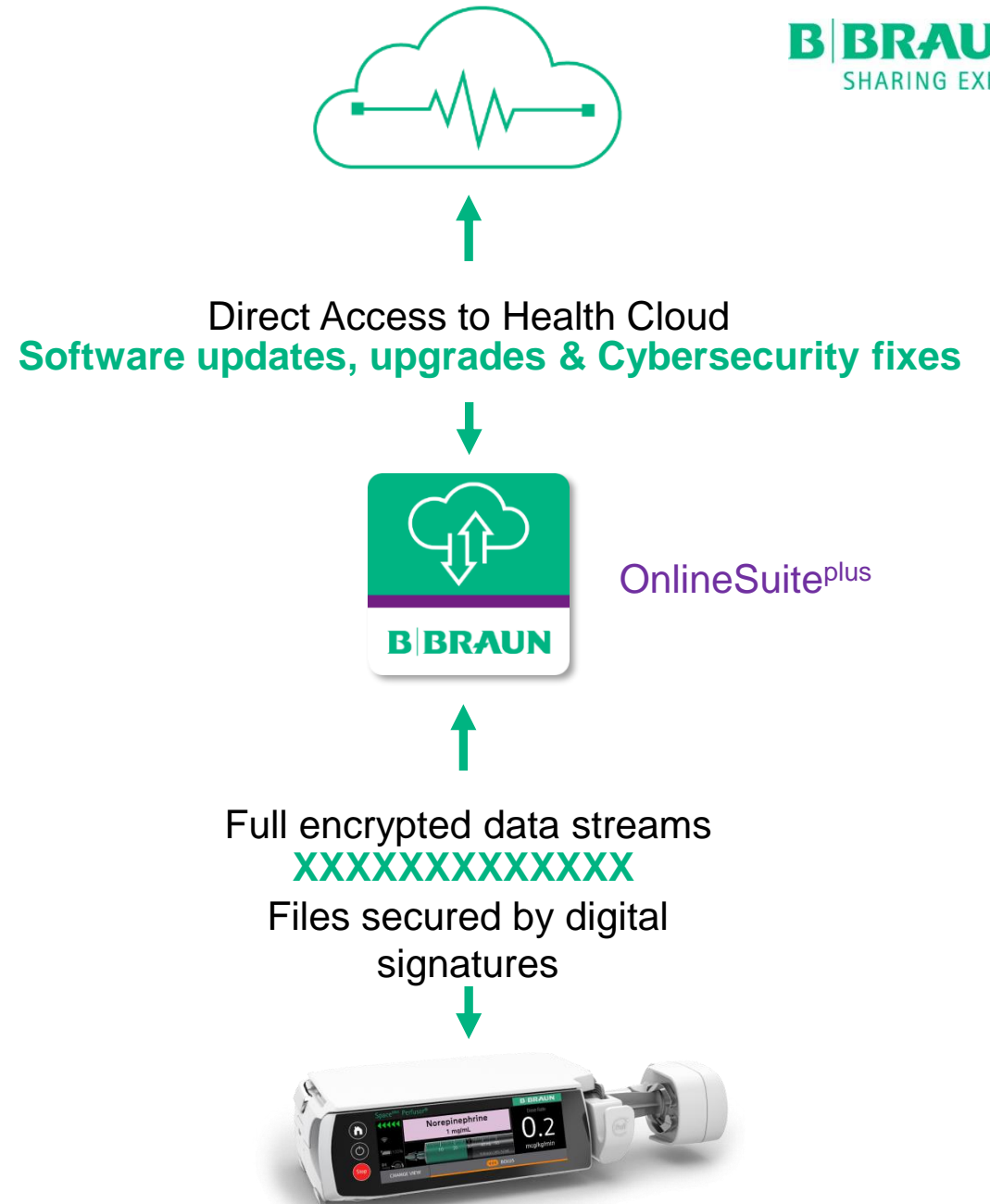
Swift & Simple Data Management

Software is always up to date!
Drug Library are continuously updated according to hospital guidelines w/o interrupting clinical workflows.

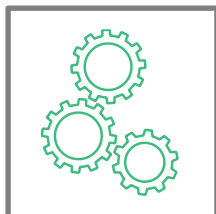


24/7 access to latest updates & upgrades

With the B.Braun Health Cloud you will receive notifications of new available updates and they are immediately available.



System Requirements



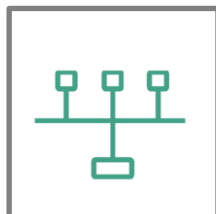
Operating System

- Linux (RHEL, Debian, Ubuntu,...)
- Windows Server 2019



Server Hardware

- CPU: 4x 2.7 Ghz
- RAM: 16 GB
- HDD: 100 GB



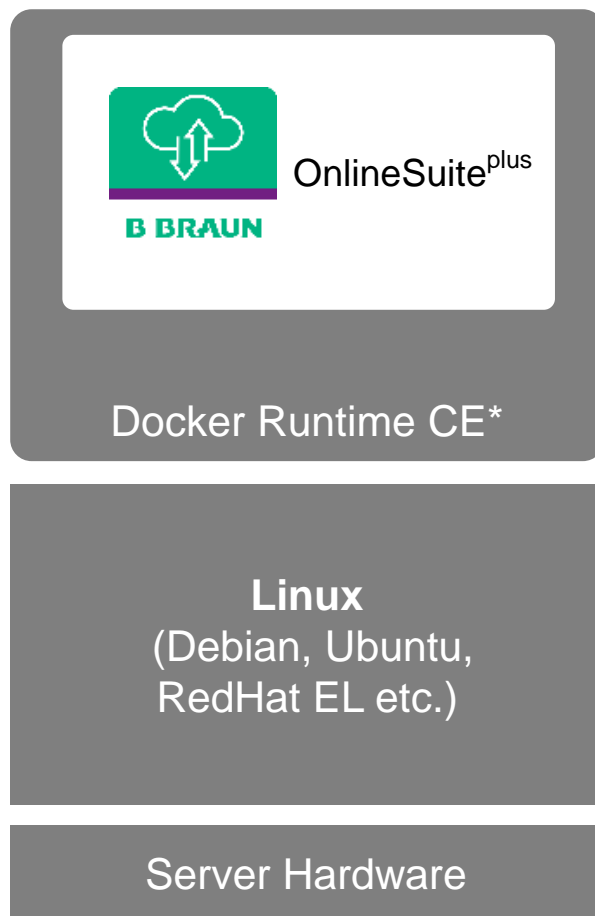
Ports

- 80 (HTTP)
- 443 (HTTPS)
- 9093 (Kafka)

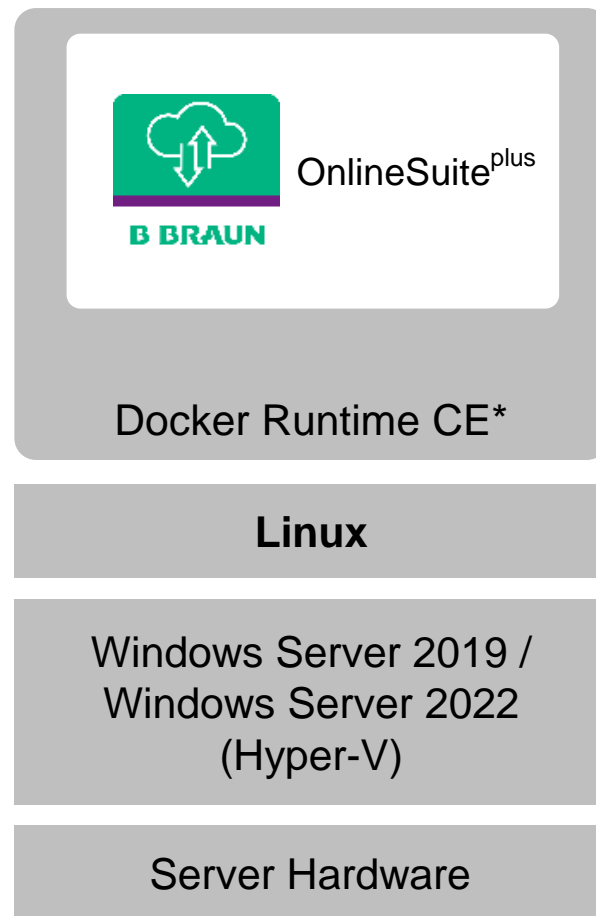


Installation Opportunities

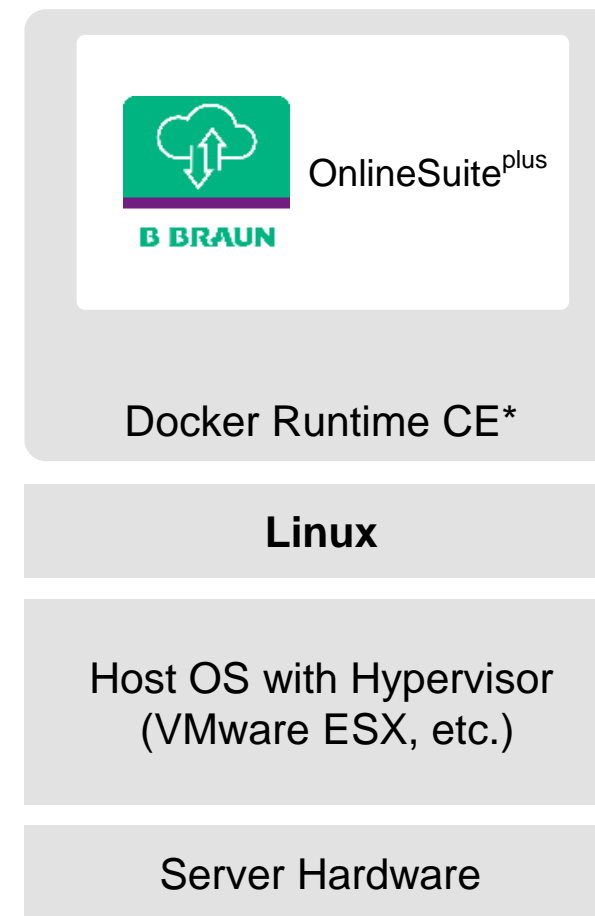
A



B



C



THANK YOU FOR YOUR TIME!

