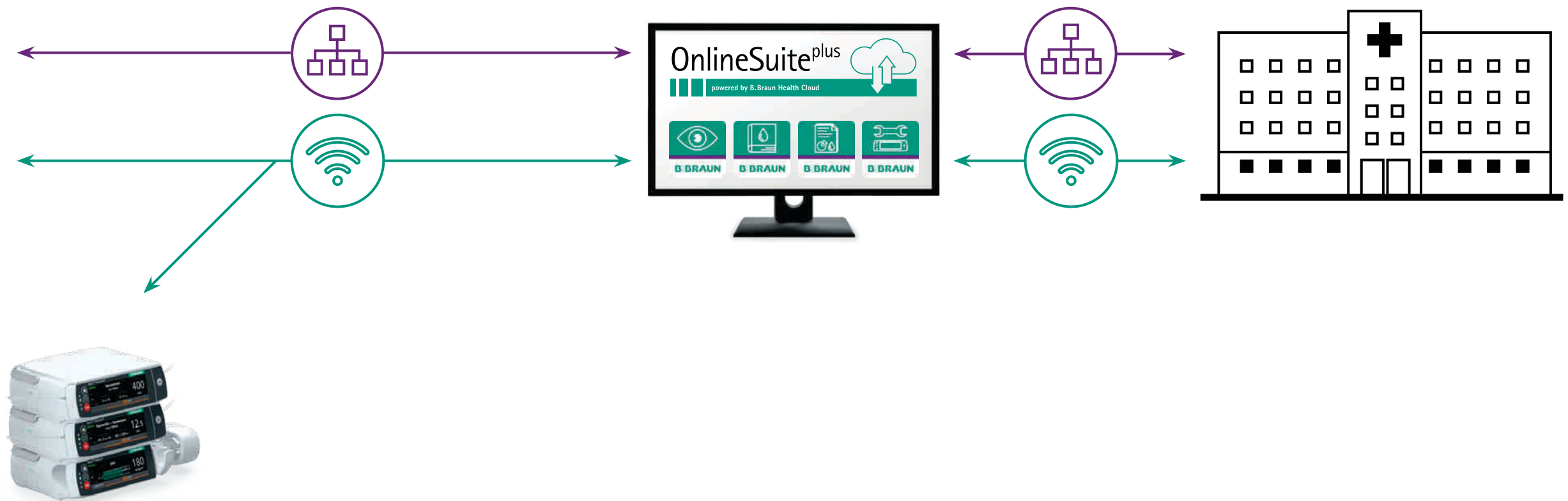| PRESCRIPTION | PATIENT ACCESS | PREPARATION | APPLICATION | DISCHARGE MANAGEMENT |

Space^{plus} & OnlineSuite^{plus}

Advanced. Superior. Digital.

#spaceplus

A MILESTONE
IN INFUSION THERAPY.

**Welcome to Space^{plus} & OnlineSuite^{plus} –
our new Smart Infusion Ecosystem!**

Space^{plus} and OnlineSuite^{plus} make up a unique ecosystem that allows for
the seamless flow of data. Each pump is equipped with an integrated WiFi
module, resulting in a continuous bidirectional exchange of data –
even during transport.

OnlineSuite^{plus}
powered by B.Braun Health Cloud

B BRAUN B BRAUN B BRAUN B BRAUN

70 YEARS
OF EXPERIENCE
IN INFUSION
PUMP SYSTEMS
— SINCE 1951 —

ENGINEERED
& MADE
IN GERMANY

TODAY'S THERAPY.

Today's infusion pumps are designed to improve accuracy and reduce medication errors.

However, studies have shown that these devices are involved in 35–60% of the estimated 770,000 adverse drug events (ADEs) that occur each year.[1]

In order to reduce infusion errors, hospitals demand smart devices that are connected to the hospital network.

More connectivity always comes with potential new vulnerabilities. Thus, a new technology is just as smart as its cyber security.[6]

30 %
OF SLEEP AROUSALS COME FROM ENVIRONMENTAL FACTORS, NOISES AND ALARMS IN THE ICU.

$ 370,000
THE INCREMENTAL REVENUE GENERATED FROM THE REDUCTION IN KEYSTROKES WITH SMART PUMPS (FROM 15 TO 2 STROKES, OR 86% LESS)

15–19%
OF MEDICAL DEVICES ARE RUNNING ON OUTDATED OPERATING SYSTEMS WHICH POSES A SECURITY RISK.

23,000
REPORTS OF MALFUNCTIONS AND INJURIES WHILE USING IV PUMPS WERE SUBMITTED.

>7 MILL.
PATIENTS ARE AFFECTED BY PREVENTABLE MEDICATION ERRORS, RESULTING IN ANNUAL COSTS OF OVER $21 BILLION.

1. Van der Wal Y. A Datadriven Feasibility Study on Silent Pumps: Applying CRISP-DM in a Knowledge Discovery Process. Universiteit Utrecht 2017.

2. Biltoft J, Finnemann L. Clinical and financial effects of smart pump-electronic medical record interoperability at a hospital in a regional health system. Am J Health-Syst Pharm. 2018; 75(14):1064–8.

3. https://www.securitymagazine.com/articles/94381-healthcare-security-challenge-how-cyberattacks-are-evolving

4. Giuliano KK. Intravenous Smart Pumps : Usability Issues, Intravenous Medication Administration Error, and Patient Safety. Crit Care Nurs Clin. 2018; 30(2):215–24.

5. Da Silva BA, Krishnamurthy M. The alarming reality of medication error: a patient case and review of Pennsylvania and National data. J Community Hosp Intern Med Perspect. 2016 Sep 7;6(4):31758. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5016741/
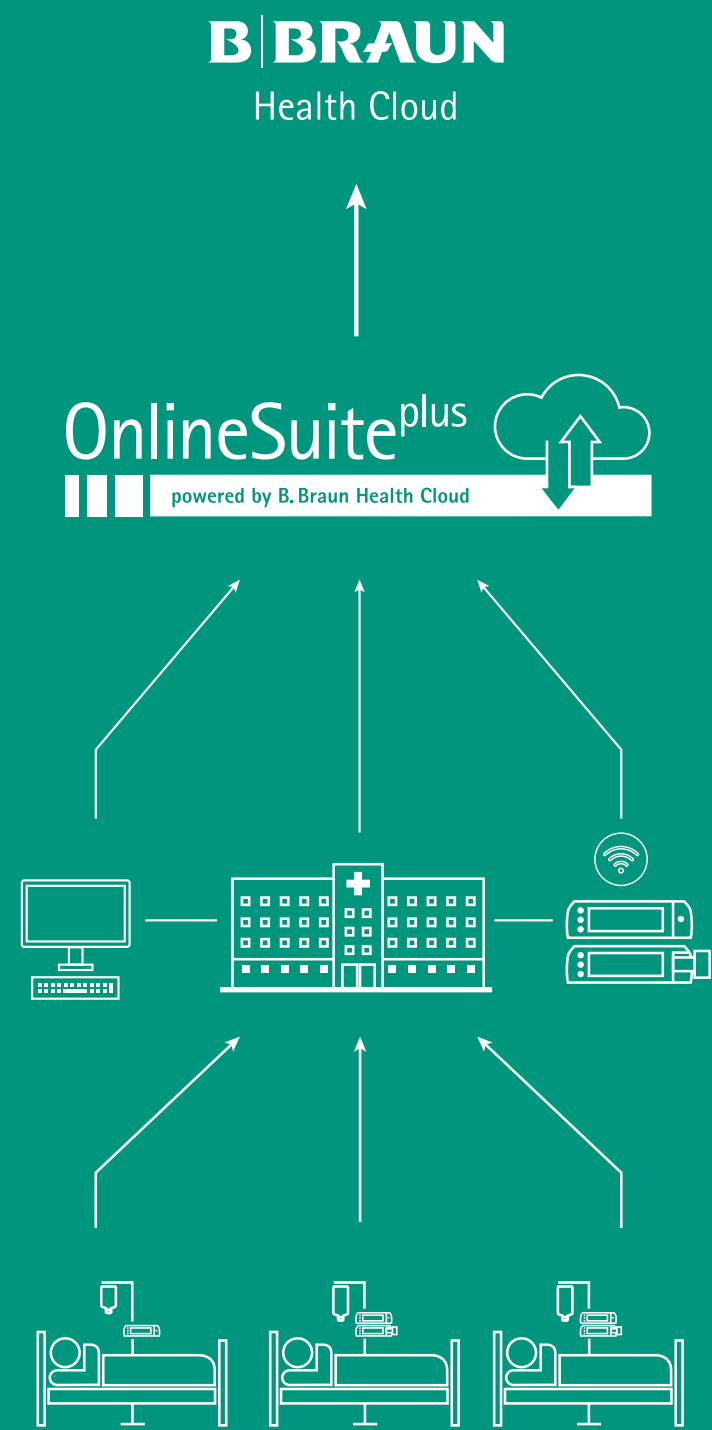
Please refer to the following pages to see how Space[plus] & OnlineSuite[plus] can help you resolve these problems.

THE DECISION FOR THIS ADVANCED INFUSION SYSTEM IS YOUR JOURNEY INTO THE **DIGITALLY ENHANCED MEDICATION OF THE FUTURE.**

CONNECTING AN ECOSYSTEM.

B|BRAUN
Health Cloud

The B.Braun Health Cloud connection provides the hospital with fully automatic updates and upgrades of software, access to E-Learnings, and further product information.

OnlineSuite^plus
powered by B.Braun Health Cloud

OnlineSuite^plus is the innovative IT platform providing software applications that help users to increase safety, efficiency, and therapy performance within the entire hospital.
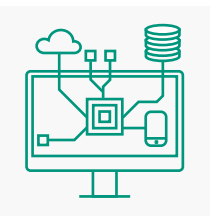
Space^plus infusion pumps are seamlessly connected to the hospital IT network thanks to the integrated WiFi module.

All infusion pumps may be used flexibly either in the station, as a single pump, or on transport.

SMART TECHNOLOGY
SMART HOSPITALS

INTEROPERABILITY
Engineered to be seamlessly integrated into the hospital IT environment using the bi-directional HL7-IHE framework for data communication.

CYBER SECURITY
Data transmitted through the hospital network between the Space^plus infusion pumps and the OnlineSuite^plus servers is encrypted.

SEAMLESS DOCUMENTATION
Space^plus infusion pumps introduce an internal data buffer for data caching when no network connection is available.

CONNECTING AN ECOSYSTEM.

Space^plus in combination with OnlineSuiteplus is THE DIGITAL INFUSION SYSTEM for hospitals that want to offer their patients complex, individual, and safe infusion therapy with maximum medical options.

It is easy to integrate into hospital information systems with it's state of the art interoperability and it's advanced approach to CYBER SECURITY; the Space^plus system is the digital solution of choice for the healthcare sector.
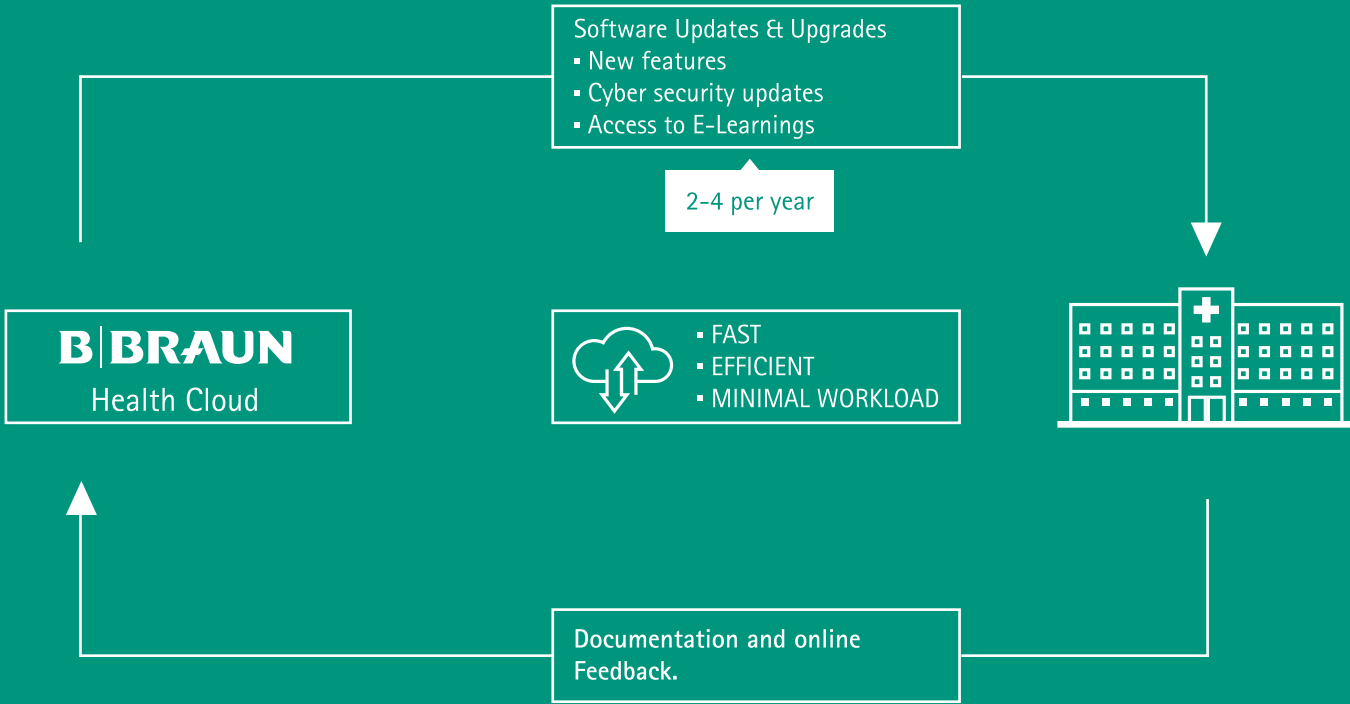
OnlineSuite^plus
powered by B.Braun Health Cloud

OnlineSuite^plus is the generation of innovative software applications for the digital management of B.Braun infusion pumps in hospitals.

#remotemaintenance

AFTER SYSTEM IMPLEMENTATION, YOU'LL RUN **A LOT OF MILES LESS** THROUGH THE HOSPITAL.

DIGITAL INFUSION PUMP UPDATES

Software Updates & Upgrades
- New features
- Cyber security updates
- Access to E-Learnings

2-4 per year

B|BRAUN
Health Cloud

- FAST
- EFFICIENT
- MINIMAL WORKLOAD

Documentation and online Feedback.

MAKE PROGRESS
NOT MILES

ZERO TOUCH DEPLOYMENT
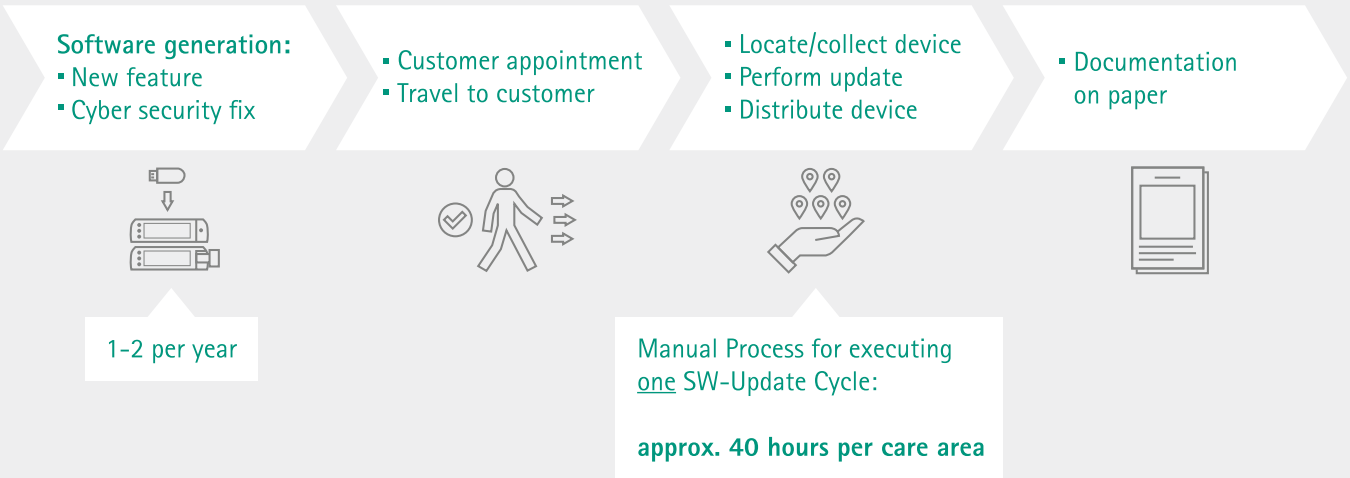Remote updates of infusion pumps via the hospital network without interrupting the clinical workflows.

ALWAYS THE LATEST SOFTWARE
The B. Braun Health Cloud provides direct access to the latest software, E-Learnings, and further product information.

DRUG LIBRARIES ON THE FLY
Drug Library data is always up to date at the infusion pumps.

TODAY'S MANUAL PROCESS

Software generation:
- New feature
- Cyber security fix

- Customer appointment
- Travel to customer

- Locate/collect device
- Perform update
- Distribute device

- Documentation on paper

1-2 per year

Manual Process for executing one SW-Update Cycle:

**approx. 40 hours per care area**

Manual processes for infusion pump updates are time consuming and interrupt clinical workflow due to the unavailability of infusion pumps during update procedures. These interruptions can last several weeks.

DRIVING DIGITALIZATION. HEALTHCARE 4.0.

Efficient processes for updating infusion devices with new SOFTWARE AND DRUG LIBRARY DATA through the hospital's network is an essential time-saving benefit for the biomedical engineering department.

Equally important from a clinical perspective is the fact that infusion therapy is not interrupted during the controlled TRANSFER OF UPDATES.
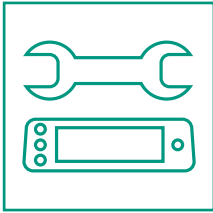
DeviceManagerplus
Technicians' centralized toolbox for managing infusion pumps across the entire hospital via its network.
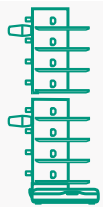
BENCHMARK FOR WORKPLACE DESIGN AND FLEXIBILITY.

TRUST IN EXPERIENCE
QUALITY OF LIFE

IP44 MOISTURE PROTECTION
Our pump is first in class with IP44 moisture protection against splashing water from any direction.

SUPERIOR WORKPLACE DESIGN
Giant possibilities in the smallest of spaces: The modular system allows for configurations of up to 24 pumps.

BATTERY CAPACITY
Long-lasting batteries set the staff free from inflexible wall sockets.

10 hrs +

BENCHMARK FOR WORKPLACE DESIGN AND FLEXIBILITY.

Easy and tool-free CONNECTION OF UP TO 6 STATIONS that can be extended to a workstation for UP TO 24 INFUSION PUMPS. The station displays visual and audible alarms centrally, allowing for quicker alarm localization within the room. The innovative design supports routine tasks like cleaning and disinfection.

reddot winner 2021

iF International Forum Design

iF DESIGN AWARD 2021

ON THE **FIRST DAY** THE PUMP
MADE **NURSES** SMILE.

EASE BY DESIGN.

TECHNOLOGY WITH A TOUCH
EFFICIENCY WITH A SMILE

SYRINGE STATUS VIA UI
The new user interface makes it even easier for you to schedule syringe changes easily, as the fill status of the syringe is visualized on the screen.

INTUITIVE USER INTERFACE
The self-explanatory user interface guides healthcare safely owing to superior usability.

AT A GLANCE
Even from a distance, a pump alarm or a running infusion can be identified by name.

EASE BY DESIGN.

The operation of Space^plus is USER-FRIENDLY AND INTUITIVE and can be adapted to clinical workflows in order to reduce medication errors.
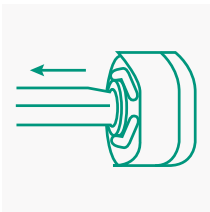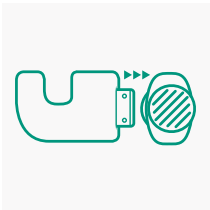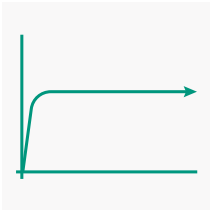
Both the Infusomat® and the Perfusor® have the SAME DESIGN, INTERFACE, AND MENU STRUCTURE. This means less training for healthcare professionals and a reduced risk of incorrect handling.

Space^plus allows one to REACT QUICKLY, APPROPRIATELY, AND SAFELY, without thinking.

INTERACT WITH TECHNOLOGY
INTERFACE WITH LIFE

OUTSTANDING ACCURACY
Precision determines health. Space^plus Perfusor® and Space^plus Infusomat® introduce new dimensions of delivery rate accuracy based on superior mechanical drive technology.

SYRINGE PISTON BRAKE
The unique syringe piston brake prevents freeflow and handling mistakes during syringe change.

FULL AUTOMATIC DRIVE
The automatic drive technology allows for outstanding start-up when changing disposables: it's fast, safe, and highly accurate.

INFUSOMAT® MEETS PERFUSOR®

The innovative drive technology not only enables OUTSTANDING STARTUP AND DELIVERY PERFORMANCE, but also delivers safety and unique convenience when changing disposables – FREEFLOW IS RELIABLY PREVENTED.

Catecholamines are also not a problem as they can be administered with the Infusomat® DUE TO IT'S CONSISTENTLY HIGH PRECISION.

SUPERIOR DESIGN FOR MORE EFFECTIVENESS.

FLOW ACCURACY AT 25 ML/H

Flow

50.0

37.5

25.0

12.5

Time

—— Space^plus Infusomat®

—— Competitor

These graphs show the accuracy and uniformity of flow over time. It must be remembered that the delivery characteristics and the delivery accuracy are significantly affected by the disposable used.

Accurate and consistent flow rate are particularly important for high-alert medications that pose significant risk when improperly delivered.
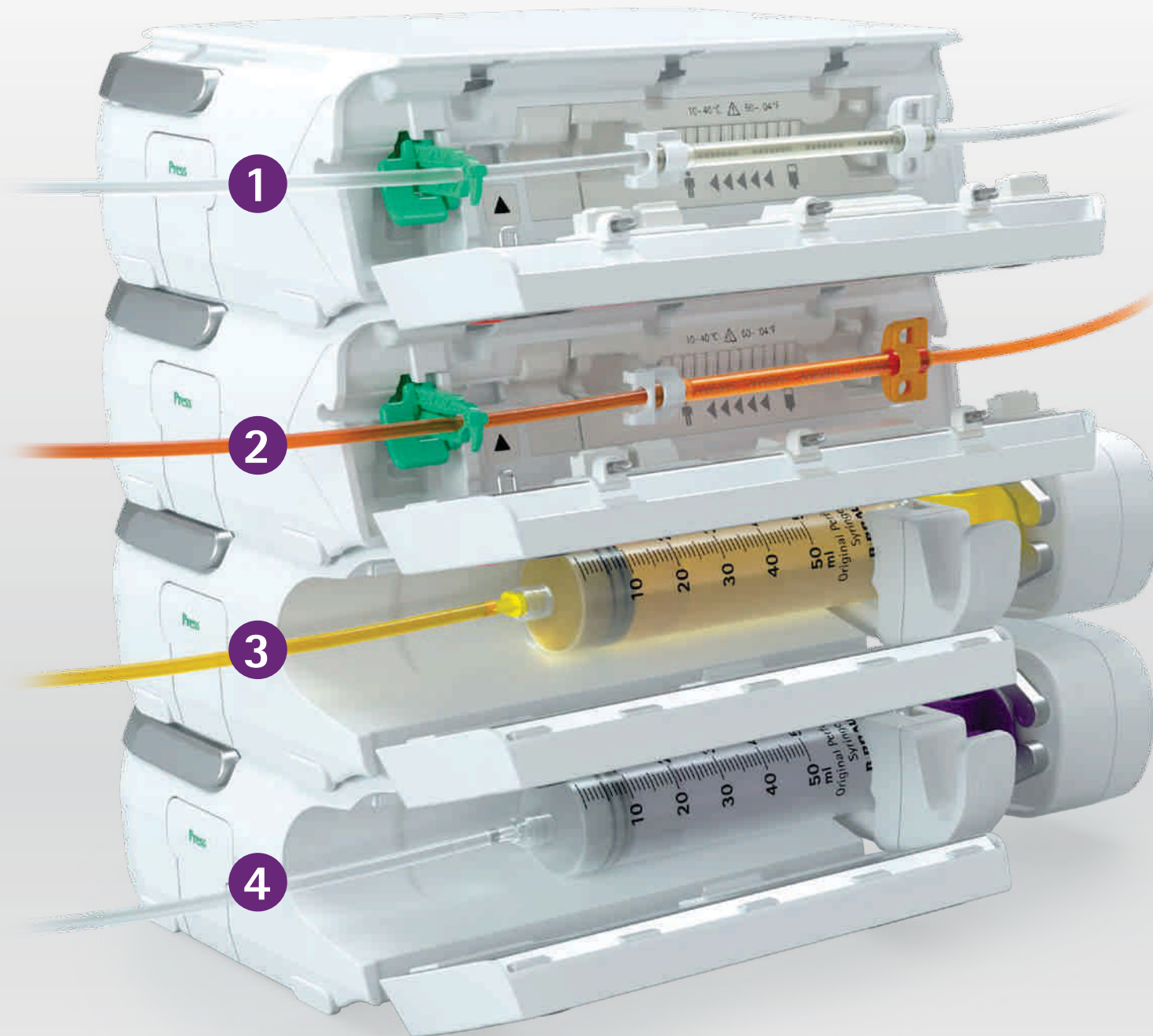
#userexperience

EVERYONE WILL FEEL THAT
THEY ARE GAINING GROUND –
SPACE FOR THERAPY.

① Standard
INFUSION THERAPY,
TCI, TIVA

② Light protected
PHOTOSENSITIVE
MEDICATION

③ NRFit®
PAIN THERAPY

④ ENFit®
NUTRITION THERAPY

A WIDE RANGE OF THERAPIES
INCLUDING DEDICATED DISPOSABLES

SAFESET – AIRSTOP
The unique filter membrane at the
bottom of the drip chamber prevents
air from the container from entering
the connection line thereby ensuring
the line cannot run empty. This
means less disconnection of lines.
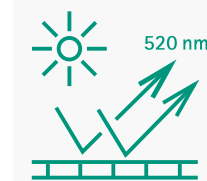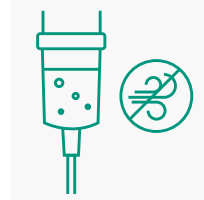
LIGHT PROTECTED
Increased security through
completely light-protected
products, which supports the
early detection of air bubbles
and particles.

520 nm

NRFIT®
More safety in the area of regional
anesthesia to avoid risks of mis-
connections between neuraxial and
intravenous application. Guidance by
connector design and color coding.

NRFit®

ENFIT®
More safety in the area of
enteral feeding to avoid risks
of misconnections. Guidance
by connector design and color
coding.

ENFit®

## DEDICATED THERAPIES, DEDICATED DISPOSABLES.

Dedicated disposables cover the full range of therapies: standard, light protected,
transfusion, pain, antibiotic, enteral as well as closed systems for oncology.

With the Original Perfusor® syringes, B.Braun offers three-part disposable syringes
with an excellent sliding performance which add to the proven delivery
characteristics of the Space^plus Perfusor®.

Additionally, the Original Perfusor® lines provide the option of colour-coding to
quickly identify highly potent drugs and to reduce the risk of confusion.

EVEN MORE PERFORMANCE
EVEN MORE SPACE
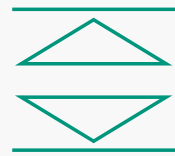
DOSEGUARD™ – THE SAFER, THE BETTER
DoseGuard™ reduces the risk of medication errors by adding safety limits to therapies.
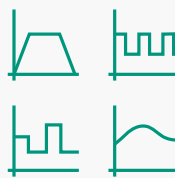
DRUG COLOR CODING
Space^plus offers multiple and individual drug color codes to support safety at first glance.

VARIOUS THERAPY MODES
Space^plus offers a variety of therapy modes for infusion, pain and nutrition therapies. For hospital-wide usage, no matter where!

Space^plus DrugLibrary Manager
Manage medication data centrally to configure your drug library according to the care unit and patient-specific needs.

THINK IN LARGER SCALES.

Space^plus covers a wide range of therapies for ADULTS, PAEDIATRICS, AND NEONATES for the delivery of parenteral and enteral fluids. These routes include, but are not limited to, INTRAVENOUS, IRRIGATION/EPIDURAL, ENTERAL, AND PARENTERAL.

THERAPY MODES reduce nurse workloads and allow for the higher standardization of therapies within the respective limits in order to reduce medication error.

The system allows for SEAMLESS WORKFLOWS during intra- and inter-hospital transfer, as well as during MRI Scans with the respective accessories.

A SCALABLE SOLUTION TO FIT YOUR NEEDS.

The smart ecosystem incorporates an exceptional overall package of leading technology and outstanding quality, sophisticated therapy options, interoperability, and efficient workflows.

OnlineSuite^{plus}

ONLINESUITE^{PLUS} IS THE GENERATION OF INNOVATIVE SOFTWARE APPLICATIONS FOR THE DIGITAL MANAGEMENT OF B.BRAUN INFUSION PUMPS IN HOSPITALS.

B.Braun Health Cloud

B.BRAUN HEALTH CLOUD PROVIDES DIRECT ACCESS TO THE LATEST SOFTWARE E-LEARN- INGS, AND FURTHER PRODUCT INFORMATION.

New User Interface

SHOWS WHAT'S MOST IMPORTANT FOR AN EFFICIENT AND SWIFT OPERATION OF OUR INFUSION PUMPS.

Reliable Construction

THE DESIGN WITHSTANDS THE CHALLENGES OF EVERYDAY LIFE DUE TO ITS FLEXIBILITY, EVEN DURING TRANSPORT.

#spaceforyou

For the pragmatic. For the ones
searching for ease and efficacy
of use. For the many, not the
few. For the early adopters that
are always striving for more.

For the nurses and the physicians.
For inventors, creators, makers.
And of course, for the patients.

For the digital natives.
For the experts.

For You

Spaceplus

LITERATURE

1. Van der Wal Y. A Datadriven Feasibility Study on Silent Pumps: Applying CRISP-DM in a Knowledge Discovery Process. Universiteit Utrecht 2017.

2. Biltoft J, Finnemann L. Clinical and financial effects of smart pump-electronic medical record interoperability at a hospital in a regional health system. Am J Health-Syst Pharm. 2018; 75(14):1064-8.

3. https://www.securitymagazine.com/articles/94381-healthcare-security-challenge-how-cyberattacks-are-evolving

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5. Da Silva BA, Krishnamurthy M. The alarming reality of medication error: a patient case and review of Pennsylvania and National data. J Community Hosp Intern Med Perspect. 2016 Sep 7;6(4):31758. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5016741/

6. Smart Medication Delivery Systems: Infusion Pumps Healthcare Human Factors Group; April 2009