



**PHILIPS**

Ingenia MR-OR

MR Systems



**Confident decision making**  
with intraoperative insights

# Confident decision making with intraoperative insights

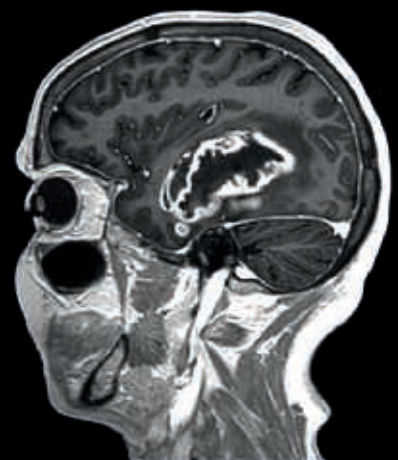
Ingenia MR-OR intraoperative MRI delivers high-quality images during neurosurgical procedures. It helps you gain up-to-date insight on surgical progress and tumor resection to support confident intraoperative decisions and update neuronavigation. The solution supports smooth, in-line patient transfer between the operating room and the Philips Ingenia MR system, with minimal procedure time added. Moreover, it lets you preserve your OR set-up for efficient neurosurgical workflows. Thanks to versatile configuration options, Ingenia MR-OR supports high utilization, while driving cost-effectiveness and flexibility.

## **Make informed surgical decisions thanks to intraoperative MRI**

Maximizing the extent of brain tumor resection during initial neurosurgery can make a critical difference to lowering recurrence and to your patient's prognosis.

Intraoperative MR images help you understand the extent of tumor resection and see critical structures. This aids you counter the issue of brain shift and make timely adjustments to your operating strategy.

- Acquire up-to-date, detailed MR imaging data at virtually any time during surgery
- Implement efficient neurosurgical workflows
- Drive cost-effectiveness and excellent use of resources

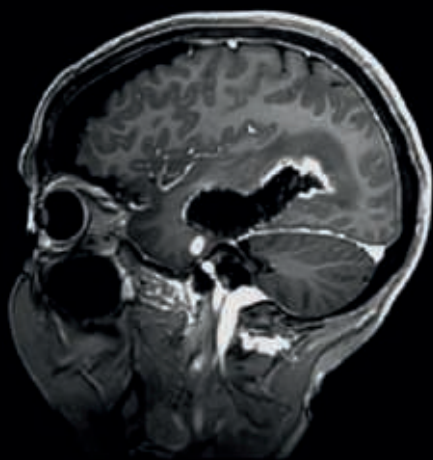


**Preoperative scan**

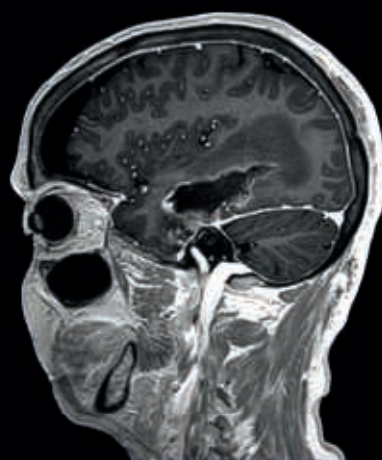
Ingenia 3.0T T1W 3D TFE with contrast.

Courtesy: Oslo University Hospital, Intervention Center, Oslo, Norway.





**Intraoperative scan**



**Postoperative scan**

# Acquire up-to-date, detailed MR imaging data

at virtually any time during surgery

Fast, streamlined transfer of your patient from the OR to the Ingenia MR scanner in the adjacent room allows you to acquire up-to-date MR information at virtually any time during surgical procedures. This supports clinical confidence in the dynamic OR environment.

## **Bring the benefits of an excellent imaging platform to surgical procedures**

At the heart of Ingenia MR-OR is a 1.5T or 3.0T Ingenia MR scanner, which delivers outstanding imaging thanks to dStream digital broadband technology. This offers excellent image quality for visualization of tumor margins and critical structures. What's more, industry-leading gradient linearity helps generate images with high geometric accuracy to update neuronavigation and counter the issue of brain shift.

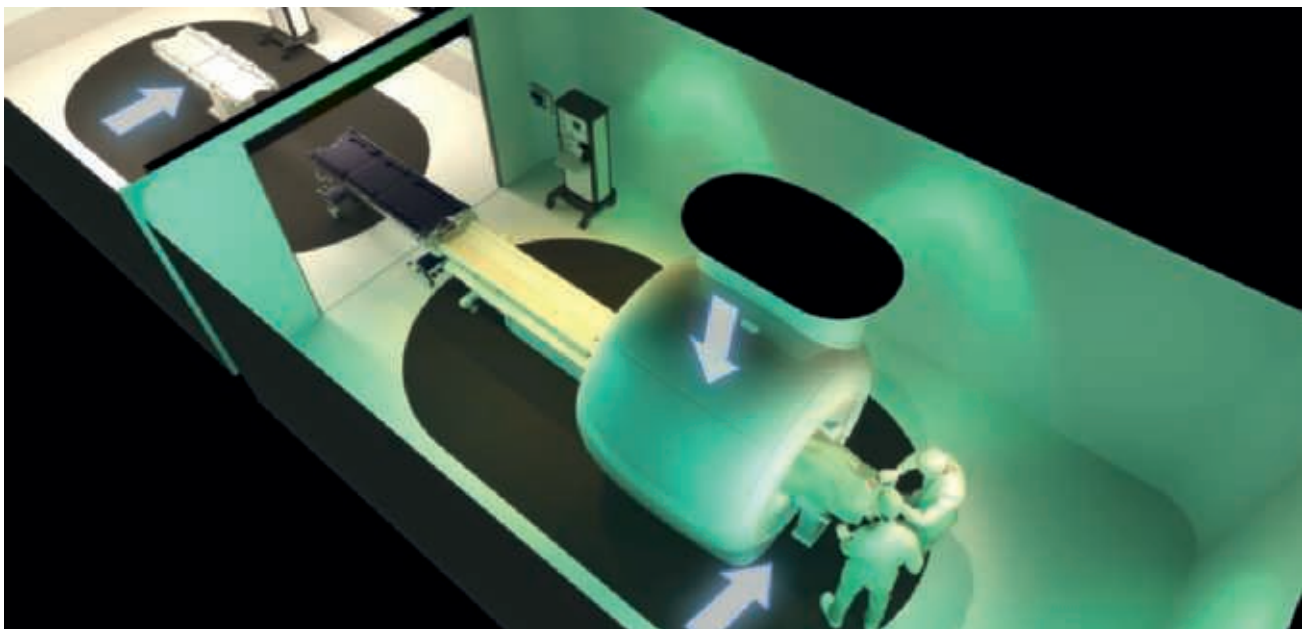


## **Support clinical excellence with an extensive range of neuro applications**

Ingenia MR gives you access to a broad portfolio of advanced neuro applications. These expand standard T1W/T2W anatomical imaging by adding fMRI, diffusion-weighted imaging (DWI) and diffusion tensor imaging (DTI), for example. These tools provide details of tumor infiltration, eloquent areas, and white matter tract definitions to help you spare critical structures.

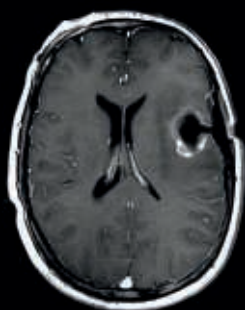
## **Perform advanced procedures**

Philips Ingenia MR-OR solution allows you to perform interventions in three workspots: in the OR, from the front of the magnet, and at the rear of the magnet. This is particularly useful for MR-guided brain biopsies and functional neurosurgery procedures, including placement of deep brain stimulators. This level of flexibility helps you increase the range of neurosurgical procedures you can perform.

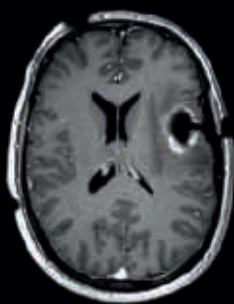


## Verifying the extent of tumor resection

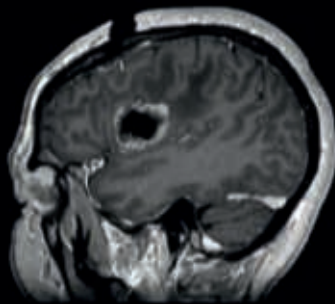
Fast multiparametric imaging protocols with dS SENSE and 3D imaging



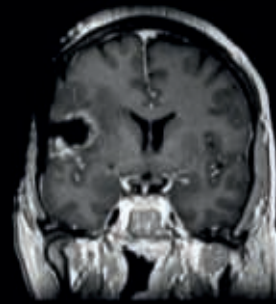
T1W TFE dS SENSE



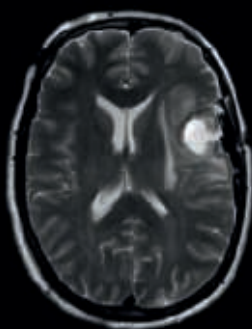
3D T1W TFE dS SENSE  
with contrast



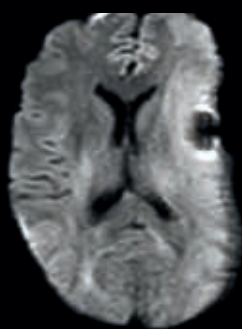
Sag MPR T1W TFE with contrast



Cor MPR T1W TFE with contrast



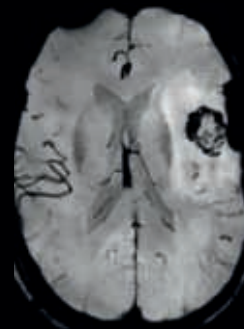
T2W TSE dS SENSE



DWI b1000

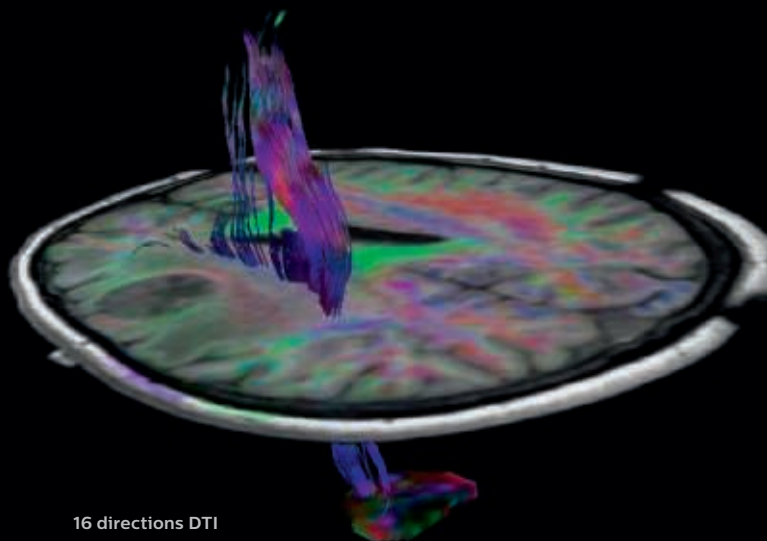


ADC



VenBOLD

## Fiber tracking to visualize white matter tract definitions



16 directions DTI



# Implement efficient neurosurgical workflows

Smooth, in-line transfer of the patient from the OR to the MR and short scanning times help you adhere to efficient neurosurgical workflows with minimal deviation from your existing processes.





#### **Create a fluent transition from OR to scanning room**

The patient transfer solution combining a Transmobil Patient Transporter and FlexTrak OR interface supports fast, in-line transfer from the surgical table to the MR scanner. Changeovers take just a few minutes, so you don't lose valuable time. Your patient remains on the transfer board throughout the entire transition for smooth patient handling. Plus FlexTrak OR's integrated docking and braking system lets you slide the board smoothly and securely.

#### **Keep your OR set-up intact**

The dual-room MR-OR solution keeps the MR magnet and the operating suite close to each other while separating them via sliding doors. This means you can continue to use standard surgical instruments and devices in the OR with minimal deviation from established surgical routine.

The FlexTrak OR remains on the MR side of the doors throughout the entire intraoperative procedure, never crossing the sterile boundary into the OR.

Sliding doors divide the operating suite from the scanning room, letting you maintain the sterility of the OR environment.

# Implement efficient neurosurgical workflows

## Gain flexibility in patient positioning

Ingenia's 70-cm wide bore allows easy positioning of patients in the prone, supine or lateral positions for surgical flexibility. With up to 55 cm, Ingenia offers the highest homogenous field-of-view in a commercial 70-cm system – ideal for versatile head positioning and to accommodate challenging patients.

## Get the versatility you need for flexible, efficient working

The Ingenia MR-OR system is compatible with both Maquet OTESUS and MAGNUS universal tables, allowing you to work in your preferred OR set-up. Two MR-compatible head clamp solutions are available for fixating your patient. The DORO® Headrest System is an open frame that combines with flexible RF coils for good accessibility and flexibility.

The NORAS head holder has an integrated 8-channel coil for high-quality intraoperative MR even in demanding patient positions. Rigidly attached to the NORAS top coil the Brainlab iMRI Registration Matrix, a combination of incorporated MR and infrared reflective (IR) markers, is an essential component to enable Automatic Image Registration of intraoperative images.

## Save precious time with high-quality technology

The dStream digital architecture and scanning protocols based on ds SENSE feature high acceleration factors for fast imaging and short acquisition windows. As a result, you can streamline exams and minimize the time the patient is in the scanner.



NORAS head holder with integrated 8-channel coil and with Brainlab cranial reference and iMRI registration matrix.

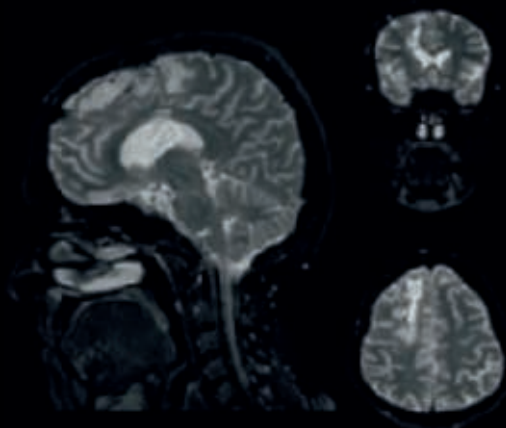


DORO® Headrest System

“The clear benefit is that in cases where the MR-OR setup helps to visualize an incomplete resection, we can immediately address the issue using updated navigation data and thus avoid a second surgery. In addition, the final intra-operative MR replaces the post-operative one that we used to perform.”

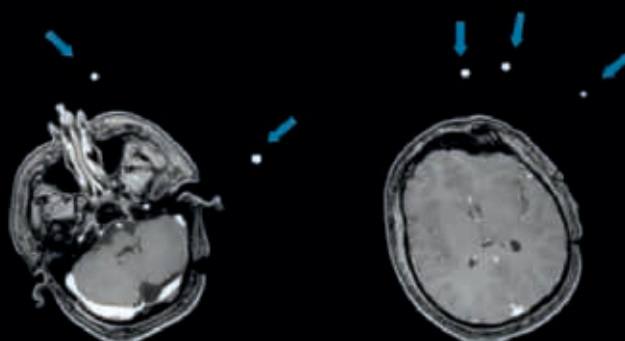
Dr. Conor Mallucci, Neurosurgeon, Alder Hey children's hospital, Liverpool, UK.





Gain rapid insight into small structures with 3D Brainview, a TSE-based imaging technique.

Courtesy of: University Medical Center Utrecht, Utrecht, the Netherlands, Ingenia 1.5T



Large field-of-view imaging supports visualization of fiducials and enhances patient positioning flexibility.

Courtesy of: New Southmead Hospital, Bristol, UK. Ingenia 1.5T with NORAS flexibility head holder.

# Drive cost-effectiveness and excellent use of resources

A well-planned intraoperative MR solution can create value for your institution. Using Ingenia MR-OR during surgery, as well as for regular diagnostic and follow-up scanning promotes cost-effective use of your resources.

## **Select from flexible siting options**

The Ingenia MRI scanner lets you access the magnet from the front and the rear. This enables a wide range of siting options that allow for a high level of customization in line with your organizational needs.

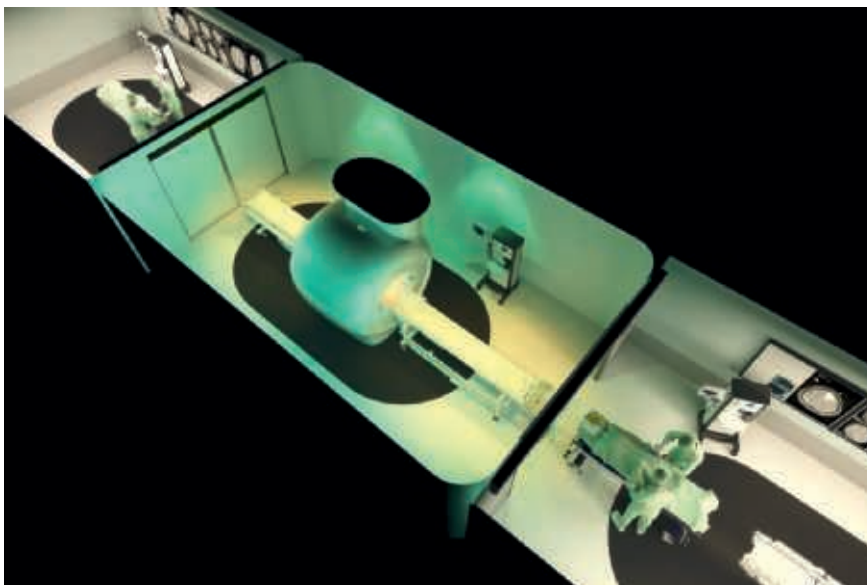
In addition to the dual-room MR-OR solution, you can also connect multiple ORs to a single MR space, for procedures taking place concurrently. This gives you flexibility in patient scheduling, helping you make more from your resources and your investment.

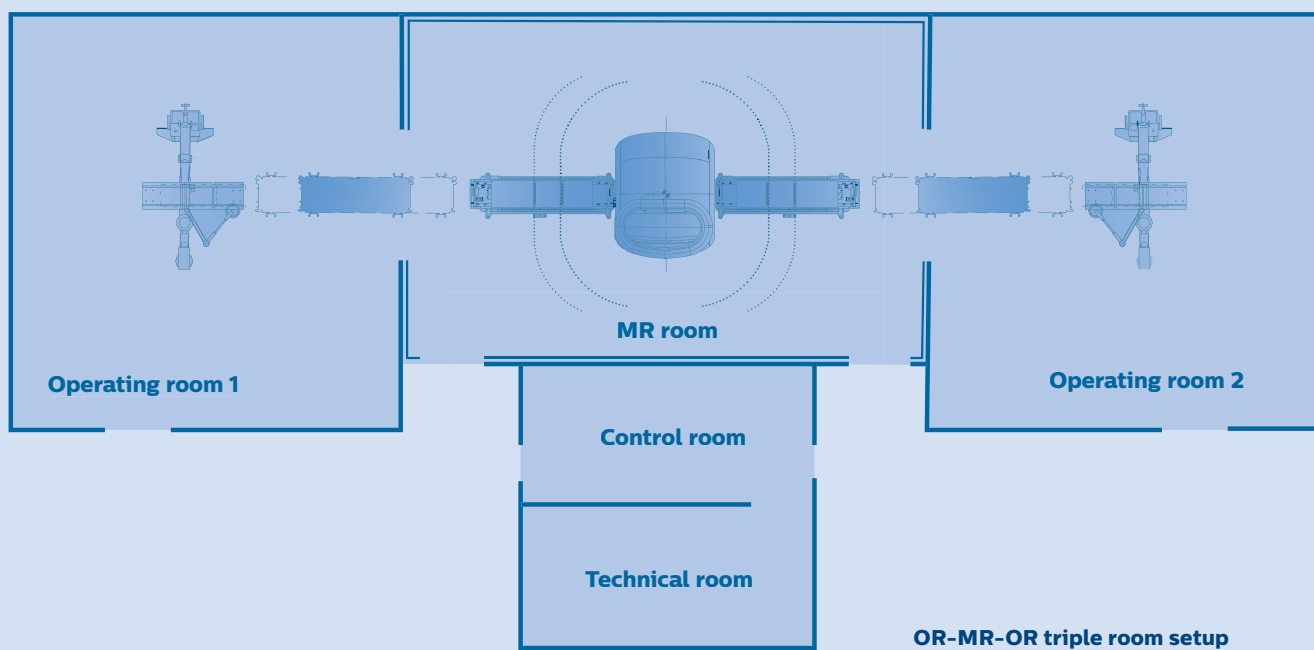
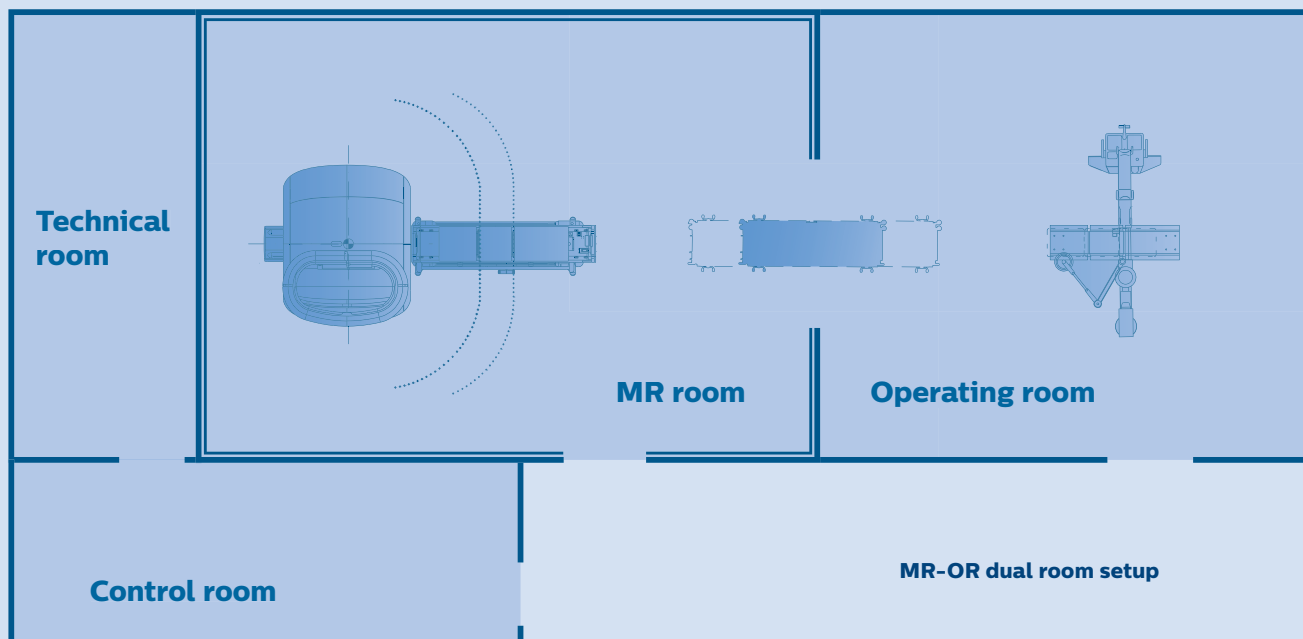
## **Extend the benefits of MRI and drive throughput**

When it is not being used intraoperatively, you can deploy the Ingenia MR system for regular diagnostic procedures and pre-and post-operative imaging. This dual function lets you make efficient use of your scanner, support cost-effectiveness, and extend the benefits of high-quality MRI to other clinical disciplines.

## **Benefit from smooth installation**

With effective planning, the Ingenia MR-OR solution can be installed without major restructuring to your existing surgical set-ups. Throughout the entire siting and installation process, Philips provides consultancy and assistance with identifying your clinical requirements and finding a solution that best meets your needs.









## Partnering with Philips to enhance your investment and expand your capabilities



Enhance



Optimize



Trade-In



Transform

We collaborate with you in the long-range planning of your medical imaging needs. With Philips SmartPath you can optimize, enhance, or transform your existing equipment so you have “like new” functionality throughout the whole lifecycle. You gain the most advanced enhancements in workflow, clinical capabilities and imaging quality with the equipment you already own.

Philips SmartPath is a partnership program that also helps you extend the life of your equipment. You can get the latest technology for a fraction of the cost or disruption of buying and installing new. If you prefer to replace your equipment with a new system, you can choose to trade in your current system at attractive terms. And you can conserve capex budget by selecting a financing option that suits your business need.

**For more information check [www.philips.com/smartpath](http://www.philips.com/smartpath)**

From the very beginning, we have always had one thing at the heart of our company – our mission to improve people’s lives through meaningful innovation. This mission inspires us to work with you to find the shortest path to the best care at the lowest cost. It drives us to create technology that makes a difference – to those who run our MR systems, those who read the images, and those patients who benefit from confident diagnoses.

We are dedicated to improving and saving lives through innovation that we develop together with clinicians and customers. Your patients can have better, more personalized care, while you make the best use of time and budget. Together, we can drive clinical performance, enhance patient and user experience, and ensure economic value, within and beyond the walls of your enterprise.









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