SOMATOM On.site

Bringing critical care imaging to your patient

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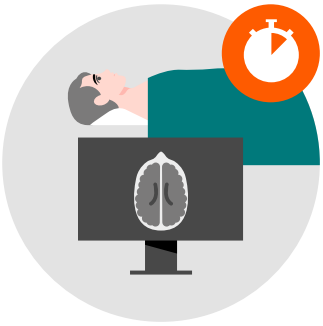
Patients in critical condition require constant supervision



Time is of essence

Patients with acute and critical head conditions face a high risk of sudden clinical deterioration, requiring rapid evaluation.[1]

Transport can worsen existing critical conditions

Up to one in four patients experience an adverse event during transport to radiology for follow-up head CT imaging.[1] Because critically ill ICU patients are often in a fragile condition, existing health issues may worsen during transport.

The impact is resounding

The challenges of transporting ICU patients to radiology impact not only patient care but also staffing, placing additional demands on the clinical teams involved throughout the workflow.

Technologists
Patients with acute and critical conditions tie up stationary CT scanners in the radiology department for at least twice as long as noncritical or acute patients.

Radiologists
Fast scanning is critical due to sudden patient health status deterioration, but is not always easy to do. Finding and deciding upon the correct treatment promptly leads to better patient outcomes.

ICU Nurses
Transporting critically ill patients to radiology often requires a dedicated team of up to five or six staff members, including critical care clinicians, temporarily pulling essential personnel away from other ICU patients. These transports place additional strain on already limited resources. With an estimated global shortage of 13 million nurses by 2030,[2] staffing pressures are expected to intensify, further contributing to personnel overload.

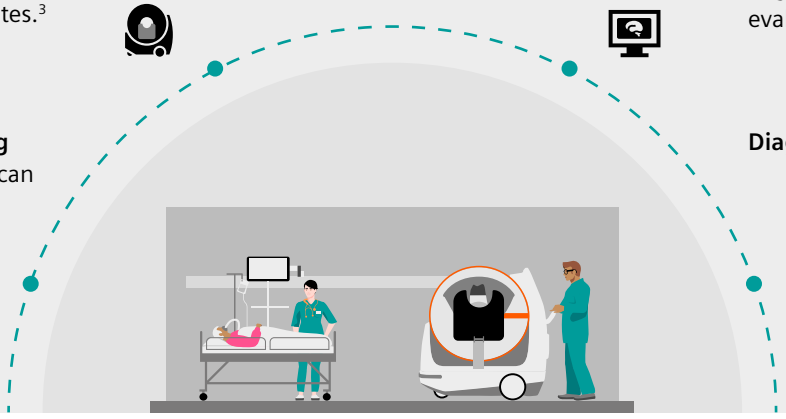
Streamline your critical care patient workflow

Transport the portable CT scanner to the patient's ICU room
Easily maneuver SOMATOM On.site to the patient's bedside and perform a CT scan in just 20 minutes.[3]

CT scan and transfer of clinical images
Scan results are sent automatically to the archiving system for review and evaluation by radiologists.

CT order and scheduling
Physician orders the CT scan and the technologist is informed.

Diagnosis and treatment
The patient is treated based on the findings.



Traditional workflow in hospital[3]

- CT order and scheduling
- Patient preparation in ICU
- Patient transport to radiology department
- Transfer patient to CT table, CT scan, and transfer of clinical images
- Patient transport to ICU
- Diagnosis and treatment

Workflow with portable CT scanner[3]

- CT order and scheduling
- Transport the portable CT scanner to the patient's ICU room
- CT scan and transfer of clinical images
- Diagnosis and treatment

On scene

Easily drive the SOMATOM On.site by using the front-facing camera and motorized trolley with two available speeds to the point of care. These features let you maneuver your way to the patient with ease.

On care

Scanning your critical care patient with SOMATOM On.site gives ICU staff more time to focus on core tasks in the ICU. This avoids preparation work and the long, often strenuous trips to the radiology department.

On time

Extended scan times and frequent delays associated with critically ill head patients can leave stationary CT systems underutilized. SOMATOM On.site brings the scanner directly to the patient, helping optimize workflow efficiency and streamline utilization across your stationary CT fleet.

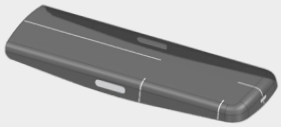
Bring head CT imaging to your patient

SOMATOM On.site is designed to bring head CT imaging to the point of care. With the ***unique telescopic gantry design, integrated universal positioning accessories,*** *and* ***proven SOMATOM technologies,*** *fast and reliable imaging for critical care patients is possible.*

Driving to the point of care

SOMATOM On.site brings critical care imaging directly to the patient's bedside, reducing the need for patient transport. As a result, more staff can remain in the ICU and focus on their core responsibilities, helping to maintain a more favorable nurse-to-patient ratio.

Adapatable for the PICU and NICU



Designed for PICU and NICU patients, this pediatric accessory provides iso-centered positioning to ensure accurate imaging. It is easily exchangeable with the adult head holder for added flexibility. Constructed from lightweight carbon fiber, it supports patients weighing up to 55 lbs, while higher sidewalls enhance safety by helping prevent falls.

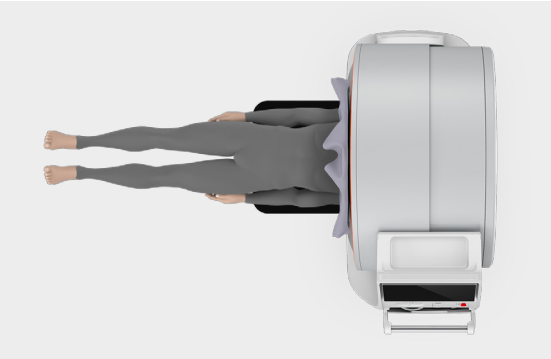
Enable easy positioning

With its unique telescopic gantry and integrated universal positioning accessories, SOMATOM On.site provides ample space when positioning patients.

Reliable image quality

Thanks to the stationary trolley, SOMATOM technologies, and telescoping gantry, motion artifacts can be eliminated during image acquisition.

01 **Telescopic gantry**
The first-of-its-kind telescopic gantry design allows for easier patient positioning, provides radiation safety for staff and neighboring patients, and eliminates motion artifacts and potential system stallouts due to floor unevenness or debris.



02 **Driveability**
Easily drive the scanner throughout the hospital using the front-facing camera, two driving speeds, brake, and ergonomic handle.

03 **Patient positioning accessories**
Integrated universal accessories to help accommodate most patients for high quality scan results.

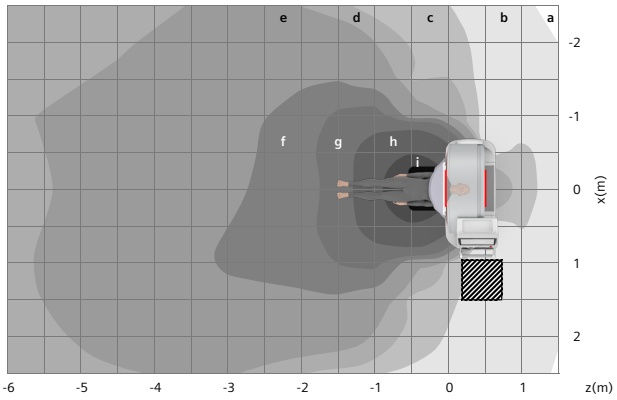
04 **CARE 2D patient observation camera**
See the patient during image acquisition even when the radiation shield covers are in place.

05 **myExam Companion powered by GO technologies**
Get reliable scan results regardless of user's experience levels with intelligent guidance.

06 **Self-shielding radiation system**
Protect staff as well as neighboring patients from scatter radiation during scanning.

07 **SOMATOM technologies**
Stellar detector, iMAR, and ADMIRE allow you to acquire high quality CT scans at the patient bedside.

A self-shielding radiation system



a	< 0.1 mSv/a⁴	d	1.0 – 2.0 mSv/a⁴	g	10 – 20 mSv/a⁴
b	0.1 – 0.5 mSv/a⁴	e	2.0 – 6.0 mSv/a⁴	h	20 – 50 mSv/a⁴
c	0.5 – 1.0 mSv/a⁴	f	6.0 – 10 mSv/a⁴	i	> 50 mSv/a⁴

Designated zone of occupancy

One of the main challenges associated with portable scanning is the safety of staff and neighboring patients when it comes to scatter radiation. This is why SOMATOM On.site features a holistic radiation safety concept integrated in the telescopic gantry.

It consists of:

- Front and back radiation covers
- Lead-lined telescopic gantry
- Designated zone of occupancy for the operator during the scan
- CARE 2D Camera to keep your patient in view even with the front radiation cover closed

myExam Companion

Built into the SOMATOM On.site is myExam Companion, an intelligent software that works with the user to get the best scan results. myExam Cockpit helps you standardize the protocols you use, and myExam Compass provides guidance during the examination.

In addition, SOMATOM On.site features workflow guidance provided by our proven GO technologies. Scan&GO enables techs to control the entire scan process via the integrated Touch UI, staying right next to the patient at all times. After the scan, the users can check the images (Check&GO) before the automated reconstruction tasks. With Recon&GO, automated postprocessing and upload to PACS is performed without any user interaction.

Technical specifications

Key data

Scanner type	Portable head CT scanner	kV steps	80, 120 kV
Detector	2.4 cm Stellar detector	Spatial resolution	0.75 mm
Iterative Reconstruction	ADMIRE	Gantry opening	35 cm
Metal artefact reduction	iMAR	Slice acquisition	32

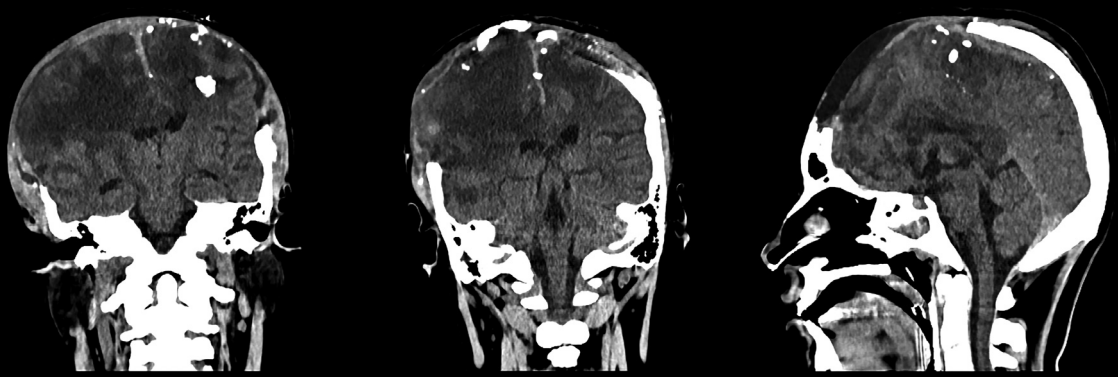
Establishing a new standard of head CT imaging in the ICU

Follow-up imaging after cerebral bleeding

Conclusion
- Faster access to neuro CT imaging
- Portable head CT enables treatment decisions based on imaging at the point of care

120 kVp; $CTDI_{vol}$: 44.1 mGy; real DLP: 1058 mGy*cm; pitch 0.55; rotation 1/s

Follow-up of severe brain injury



Conclusion
- Critically ill patient could stay connected to stationary ICU monitoring equipment during the CT scan
- Reduction of complications associated with complex patient transportation from the ICU to the radiology department

120 kVp; $CTDI_{vol}$: 44.1 mGy; real DLP: 1058 mGy*cm; pitch 0.55; rotation 1/s

Courtesy of Erasmus Medical Center, Rotterdam, The Netherlands.
Images acquired with first generation of SOMATOM On.site

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References

1 Parmentier-Decrucq E, et al. Adverse events during intrahospital transport of critically ill patients: incidence and risk factors. Ann Intensive Care. 2013; 3(1):10.

2 International Council of Nurses Policy Brief: The global nursing shortage and nurse retention. 2021

3 Rumboldt Z, et al. Review of portable CT with assessment of a dedicated head CT scanner. AJNR Am J Neuroradiol. 2009; 30(9): 1630–6.

4 A typical clinical operation, relevant for personal dose, is 5 examinations per day, 5 operation days per week, and 50 operation weeks per year.

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