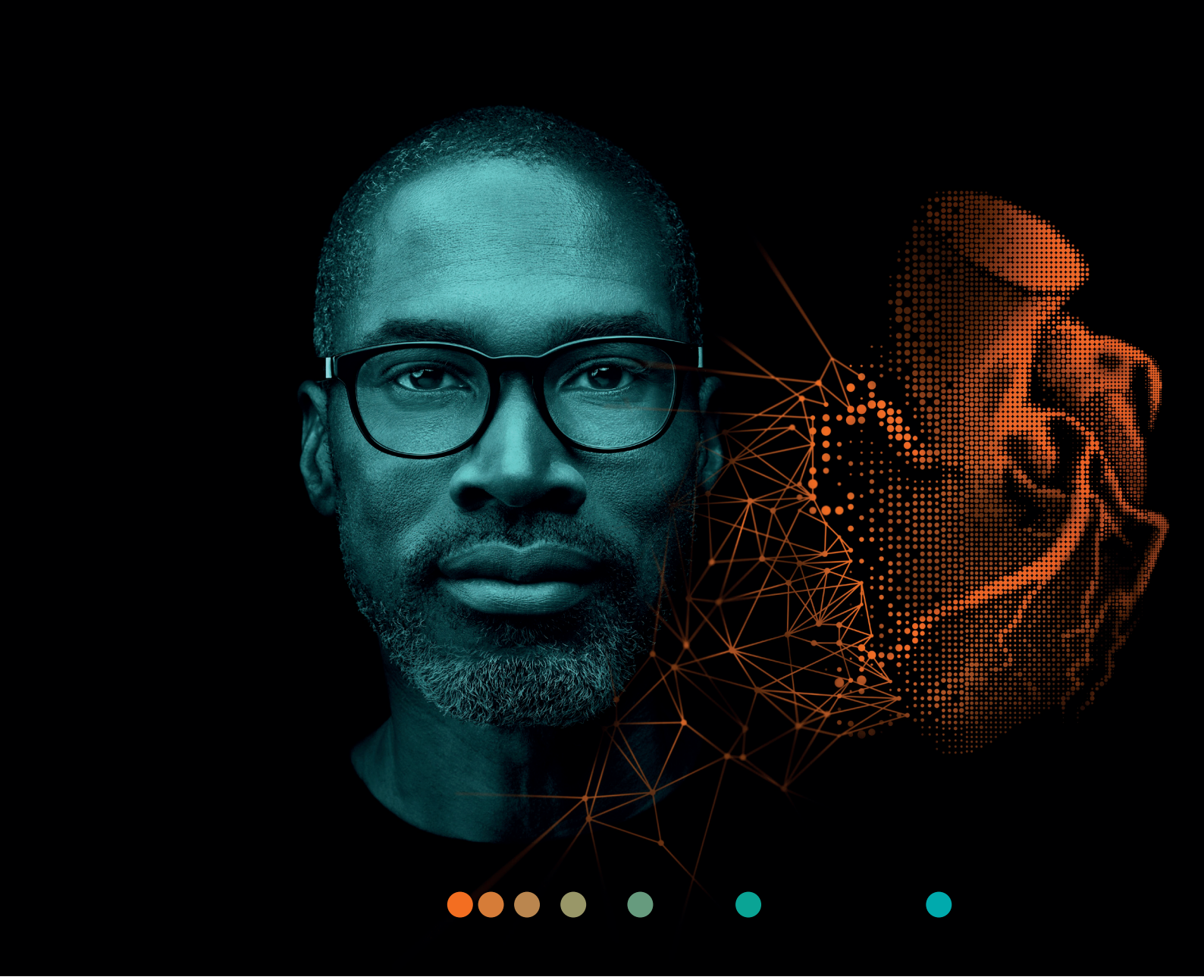


syngo Dynamics

Enhancing cardiology workflows with integrated imaging

Consolidating extensive imaging data from multiple sources into a single platform for a more comprehensive view of patient health.

siemens-healthineers.com/digital-health-solutions/syngo-dynamics

SIEMENS Healthineers

Optimizing workflows and improving clinical decision-making with multimodality cardiology imaging

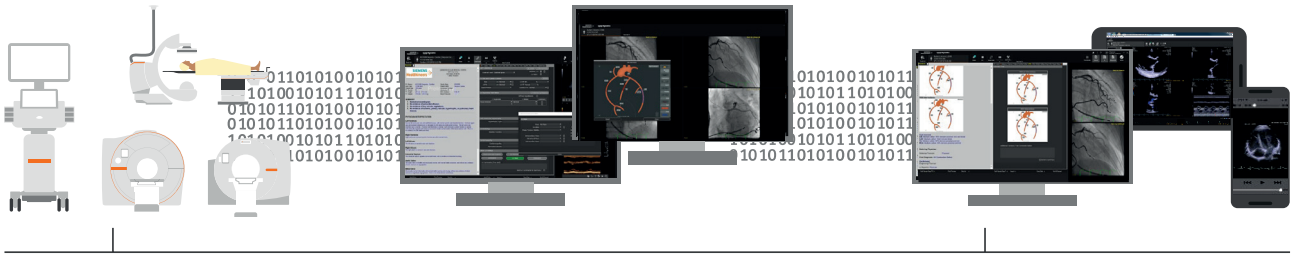
In a landscape of cardiovascular care that is rapidly evolving, clinicians are increasingly relying on advanced modalities such as cardiac CT and MRI to obtain comprehensive structural and functional data for patients with complex medical needs.

To efficiently manage and integrate the wealth of information available from disparate modalities and vendors, clinicians are using *syngo* Dynamics to optimize cardiology workflows and improve clinical decision-making. In addition to managing data from front-line cardiology modalities such as echocardiograms and angiograms, it integrates data from nuclear medicine, hemodynamics, electrophysiology, CT, and MRI into a single access point and stores it in a single database. By enabling multimodality data collection in a single, searchable repository, *syngo* Dynamics facilitates academic research and allows healthcare institutions to participate in national registries.

They can also submit operational data for auditing purposes to ensure compliance with industry standards, improve quality of care, and gain relevant accreditations.

The reading and reporting platform enables side-by-side comparison of up to six patient studies, enhances data consistency with structured reporting, and seamlessly integrates with third-party applications for post-processing, such as Circle cvi42. Its Remote Workplace feature enables reading, reporting, and discussions even when users are in low-bandwidth environments away from the hospital or clinic.

syngo Dynamics for optimized cardiovascular reading and structured reporting



Imaging Modality

Measurements can be performed on or offline to streamline workflow

syngo Dynamics

Automatically consolidates images and information and applies evidence-based analysis for consistent data and efficient workflow

syngo Dynamics

Structured report guides diagnosis, treatment and efficient payment Report and images can be accessed anywhere, anytime

"As part of the patient journey, many patients will have had multiple studies," says Dr. Sarah Elgamal, Consultant Adult Congenital Heart Disease (ACHD) and Imaging Cardiologist at Liverpool Heart and Chest Hospital in the United Kingdom. "It's really important to have the echocardiogram, the CT, the cardiac MRI, and the basic angiogram all in one spot. This is particularly important when having a team discussion to understand the pathology of patients with complex cardiac conditions."

Bringing multi-modality reading and reporting together

The prevalence of complex cardiovascular disease is expected to rise significantly in the coming years [1], and multi-modality imaging has emerged as a key component of patient care [2] that allows for the visualization of intricate and small structures, as well as heart function. A cardiologist treating a patient with coronary artery disease, for example, may require information stemming from ultrasound, angiography, CT, MRI, and molecular imaging.

At Liverpool Heart and Chest Hospital, Dr. Elgamal specializes in ACHD, often assessing patients serially over the course of the patient's lifetime.

With *syngo* Dynamics, multidisciplinary teams of specialists such as Dr. Elgamal can seamlessly view and compare multiple studies across different points in time and imaging modalities on a single software application. The system also integrates with advanced post-processing solutions like Circle cvi42, enabling detailed cardiac MRI flow analysis and facilitating comparisons with other imaging results for a more comprehensive patient assessment. Additionally, automatic data transfer from advanced *syngo*.via CT workflows, such as CT Cardiac, enhances workflow efficiency and ensures data consistency. By consolidating all relevant patient data in one place, clinicians can make faster, more informed clinical decisions with greater confidence.

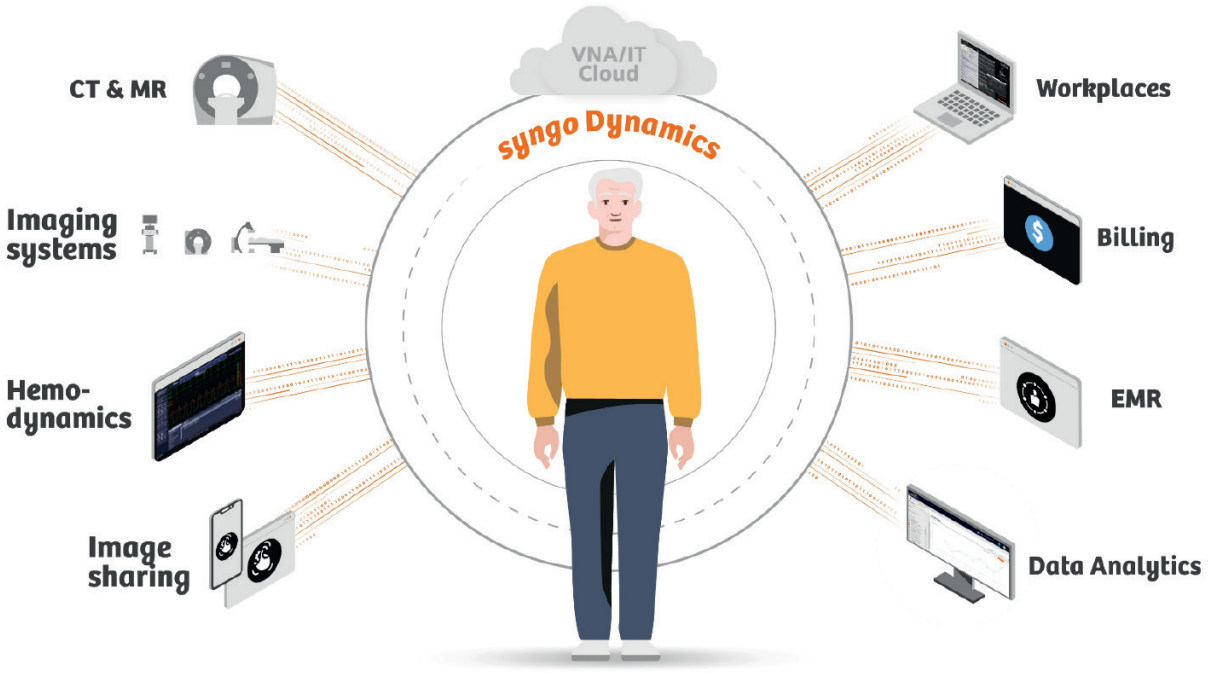
Saving time with automation

syngo Dynamics provides standardized measurements for echocardiography through its calc palette, which functions like an encyclopedia of measurements. In addition to importing measurements from an imaging modality, *syngo* Dynamics allows for offline measurements to reduce the time needed on modalities. Automated tools for ejection fraction calculations streamline workflows while also reducing inter- and intra-operator variability.

"I believe automation has allowed me to save somewhere in the ballpark of maybe 20 to 30 minutes in my analysis and my reporting time," Dr. Elgamal says. "It allows me to report more patients in the time I have. Advances in the

"I believe automation has allowed me to save somewhere in the ballpark of maybe 20 to 30 minutes in my analysis and my reporting time. It allows me to report more patients in the time I have."

Dr. Sarah Moharem Elgamal
Consultant Radiologist, Board Member of European Association of Cardiovascular Imaging (EACVI) Liverpool Heart and Chest Hospital, UK



A 360-degree view of data for informed cardiovascular care

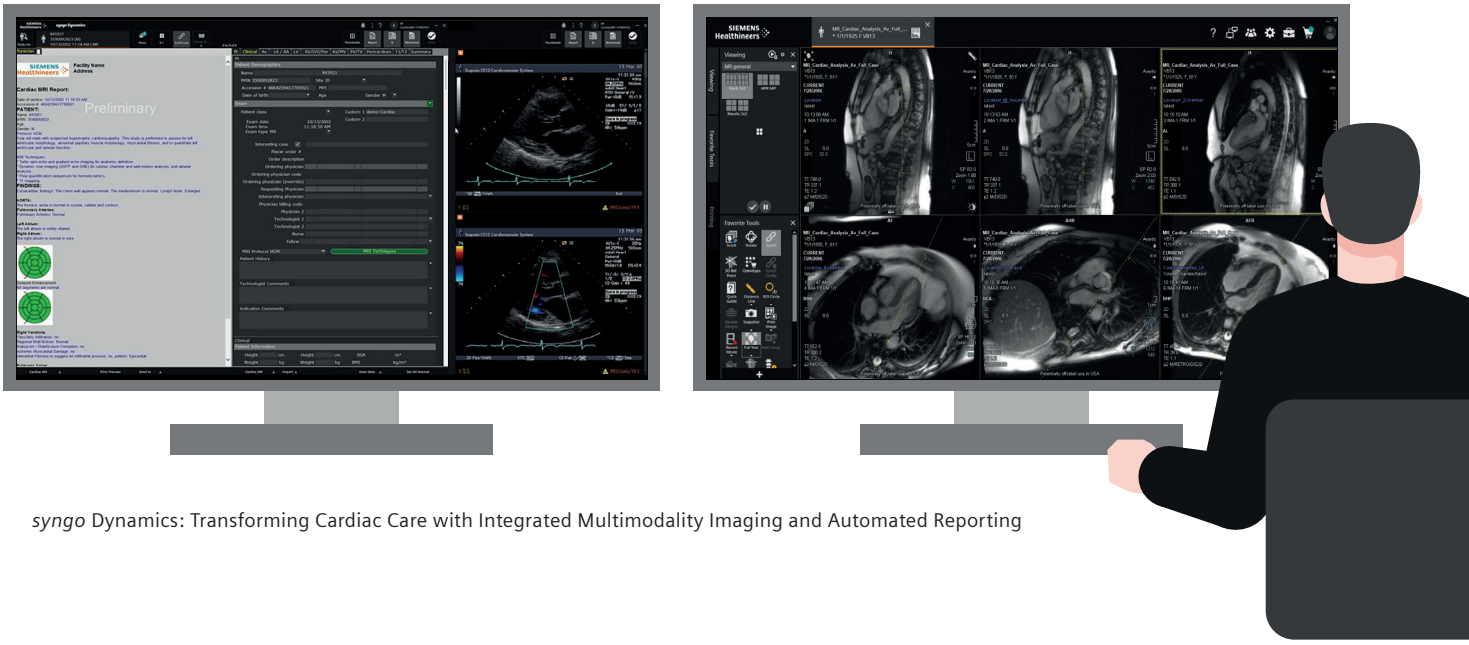
tools that we use for assessing serial or cross-sectional images are really important. We all work hard, but we have to work smarter."

Physicians also can access and customize more than 150 graphical reporting tools such as coronary tree and congenital heart diagrams, which are integrated into customizable reporting templates. These diagrams can be annotated to highlight lesions, plaques, stenoses, or malformations, as well as any implanted devices, with annotations automatically generating corresponding text in the patient report. This streamlines documentation, saving time and reducing errors from manual data entry. Additionally, side-by-side pre- and post-operative comparisons allow physicians to visually demonstrate interventions like stent placements, improving both clinical decision-making and patient communication.

Collecting and standardizing patient data on a single platform helps support clinical decision-making and reduces duplicate exams. It also helps medical practices accurately document

"There's a tremendous amount of data and qualitative assessments that go into each report. One of the ways we can do that is by directly importing the data into the structured report."

Dr. Brian Fonseca
Associate Professor of Pediatric Cardiology at the University of Colorado Anschutz Medical Campus



syngo Dynamics: Transforming Cardiac Care with Integrated Multimodality Imaging and Automated Reporting

clinical care to ensure full-value reimbursement.

Optimizing workflows with structured reporting

At Children's Hospital Colorado in the United States, the use of the structured reporting tools of *syngo* Dynamics optimizes workflow and supports multi-center research projects. Dr. Brian Fonseca, Director of Cardiac MRI and Director of Clinical Informatics at the hospital's Heart Institute, says that prior to the adoption of *syngo* Dynamics, data from MRI studies were housed in a variety of formats, such as documents and spreadsheets that were not standardized and required the time-consuming and error-prone manual inputting of data. "There's a tremendous amount of data and qualitative assessments that go into each report," Dr. Fonseca says. "Organizing that in a coherent fashion with all the calculations that are required was a really difficult task. One of the things we wanted to do in the setting of likely increasing patient volumes is to increase our efficiency. One of the ways we can do that is by directly importing the data into the report using structured reporting."

Dr. Fonseca, who is also Associate Professor of Pediatric Cardiology at the University of Colorado Anschutz Medical Campus, says the use of structured reporting increases consistency to support data analysis, data mining, and multi-center research. He added that he and his colleagues configured the reports for consistency to follow Society for Cardiovascular Magnetic Resonance (SCMR) guidelines, International Classification of Disease (ICD-11), and International Pediatric and Congenital Cardiac Code (IPCCC) nomenclature.

Enhancing efficiency with seamless third-party integration

In addition to bringing multi-modality reading and reporting together on the same platform, *syngo* Dynamics integrates with third-party platforms such as hospital information and billing systems, hemodynamic monitoring systems, advanced 3D and 4D echocardiology post-processing software platforms, and cardiac CT and MR post-processing platforms.

Dr. Fonseca noted that the cvi42 integration, in particular, allows for streamlined transfer of information such as pre-labeled flow and function data, as well as ventricular volumes, to optimize the reporting process. "One of the major efficiency gains from the system is the integration with cvi42," he says. "To get this data to transfer seamlessly over to the *syngo* Dynamics reporting template, all you have to do is press a button to add it to the report."

The products/features mentioned herein are not commercially available in all countries. Their future availability cannot be guaranteed.

The statements by Siemens Healthineers' customers described herein are based on results that were achieved in the customer's unique setting. Because there is no "typical" hospital or laboratory and many variables exist (e.g., hospital size, samples mix, case mix, level of IT and/or automation adoption) there can be no guarantee that other customers will achieve the same results.

References

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