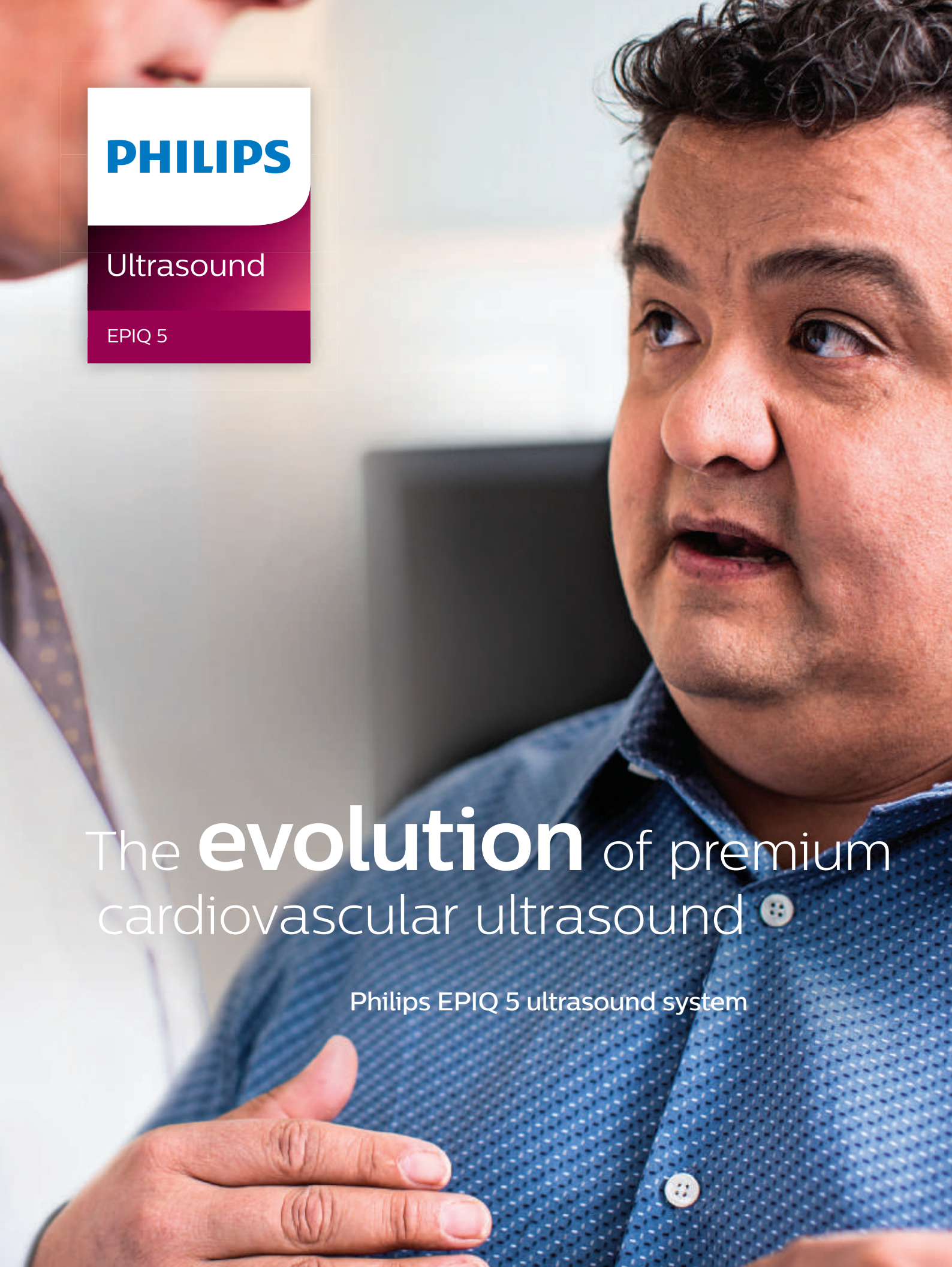

PHILIPS
Ultrasound
EPIQ 5
The evolution of premium cardiovascular ultrasound
Philips EPIQ 5 ultrasound system

The new **challenges** in global healthcare

Unprecedented advances in premium ultrasound performance can help address the strains on overburdened hospitals and healthcare systems, which are continually being challenged to provide a higher quality of care cost-effectively. The goal is quick and accurate diagnosis the first time and in less time.

It's our most powerful architecture ever applied to ultrasound imaging – touching all aspects of acoustic acquisition and processing, allowing you to truly experience ultrasound's evolution to a more definitive modality.

The **evolution** of premium cardiovascular ultrasound

Key trends in global ultrasound

- There is a continued search for affordable healthcare solutions in order to deliver more for less with high-quality patient care.
- With echocardiography gaining prominence as a point-of-care tool (such as in the emergency department), increasing numbers of patients are being referred to cardiologists for further investigation.
- Echocardiography is the imaging mode of choice and exam volumes continue to increase every year.

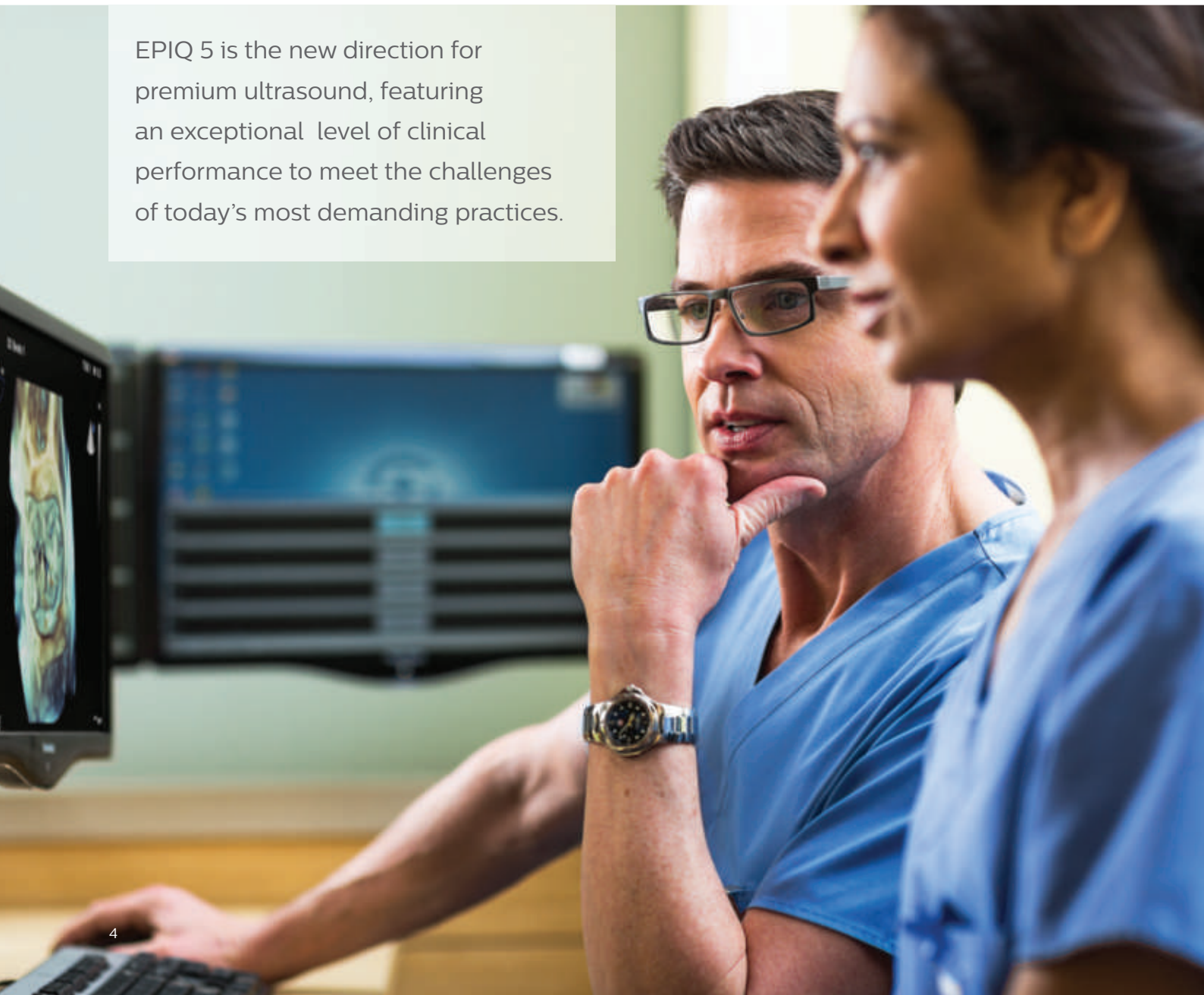
Premium ultrasound today demands improved clinical information from each scan, faster and more consistent exams that are easier to perform, and allow for a high level of confidence, even for technically difficult patients.

Performance

More confidence in your diagnoses even for your most difficult cases

Supported by our family of proprietary PureWave transducers and our leading-edge Anatomical Intelligence, this platform offers our highest level of premium performance.

EPIQ 5 is the new direction for premium ultrasound, featuring an exceptional level of clinical performance to meet the challenges of today's most demanding practices.



Creating **new realities**, redefining clinical expectations

nSIGHT Imaging goes beyond conventional ultrasound performance for new levels of definition and clarity.

Philips *n*SIGHT Imaging is a totally new approach

The Philips proprietary ***n***SIGHT Imaging architecture introduces a totally new approach to forming ultrasound images. Unlike conventional systems that form the image line by line, ***n***SIGHT creates images with superb resolution down to the pixel level.

Extraordinary architecture

nSIGHT Imaging incorporates a custom multi-stage precision beamformer along with massive parallel processing. This proprietary architecture captures an enormous amount of acoustic data from each transmit operation and performs digital beam reconstruction along with mathematically optimized focal processing to create real-time images with exceptional resolution and uniformity.

Frame rate

Conventional
Users must choose between frame rate and image quality

***n*SIGHT Imaging**
More than doubles the frame rate without impact to image quality

***n*SIGHT Imaging** creates superbly focused images with fewer transmit operations so you can experience both highly detailed ultrasound images and extraordinary temporal resolution.

Uniformity

Conventional
Best resolution is limited to transmit focal zone

***n*SIGHT Imaging**
Corrects focus during beam reconstruction for superb uniformity

***n*SIGHT Imaging** achieves superb uniformity through coherent beam reconstruction algorithms that apply mathematical focal correction coefficients continually at all depths of the image.

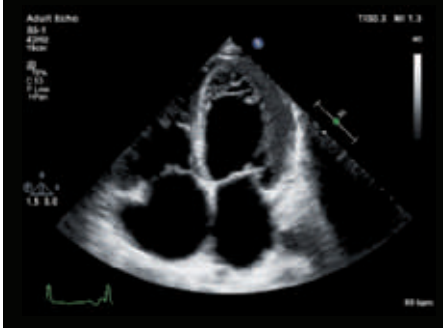
Penetration

Conventional
Penetration limitations and poor sensitivity to weak signals

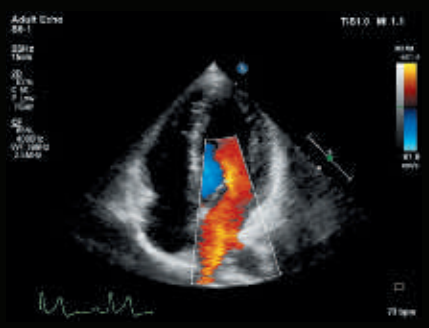
***n*SIGHT Imaging**
Superb penetration across full range of frequencies

***n*SIGHT Imaging** architecture's ultra-wide dynamic range and unique beam reconstruction reinforces weak tissue signals allowing enhanced penetration at higher frequencies even on difficult patients.

Image quality: the numbers tell the story



Dilated cardiomyopathy



Excellent color flow seen into the pulmonary veins

Comparing EPIQ 5 to conventional premium systems shows breakthrough advances in imaging performance*

- Up to **9%** increase in penetration (penetration = ability to scan at depths and maintain resolution in order to complete the study
- Up to **46%** increase in lateral resolution as well as **10%** in axial while maintaining existing frame rate (ability to maintain resolution at high frame rates)

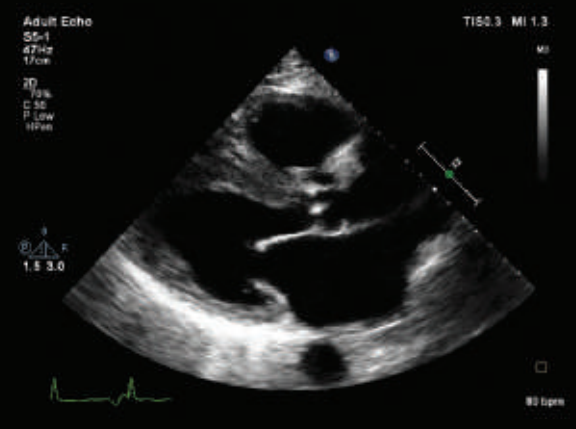
* 2013 quantitative engineering study comparing Philips iU22 ultrasound system with EPIQ 5. Dependant upon transducer, application, and TSI.

nSIGHT Imaging strengthens the power of PureWave to image technically difficult patients. PureWave crystal technology represents the biggest breakthrough in piezoelectric transducer material in 40 years. The pure, uniform crystals of PureWave are 85% more efficient than conventional piezoelectric material, resulting in exceptional performance. This technology allows for improved penetration in difficult patients, with a single transducer for excellent detailed resolution.

Maximize clinical capabilities

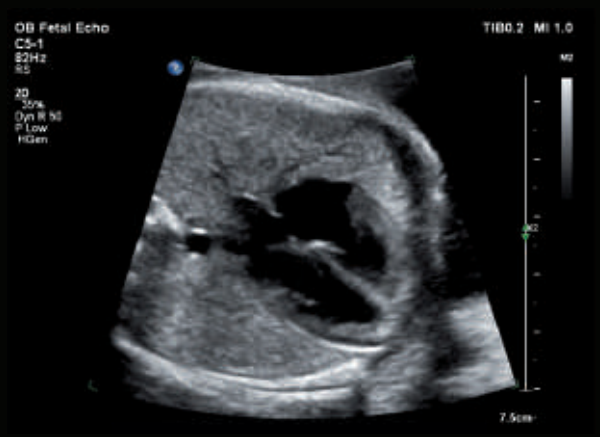
PureWave offers enhanced technology for imaging technically difficult patients in a wider range of applications on a cardiology platform, such as the PureWave S5-1, C5-1, and C9-2 for difficult-to-image abdominal and fetal echo patients.

Exceptional performance from all PureWave transducers including S5-1, C5-1, and C9-2.



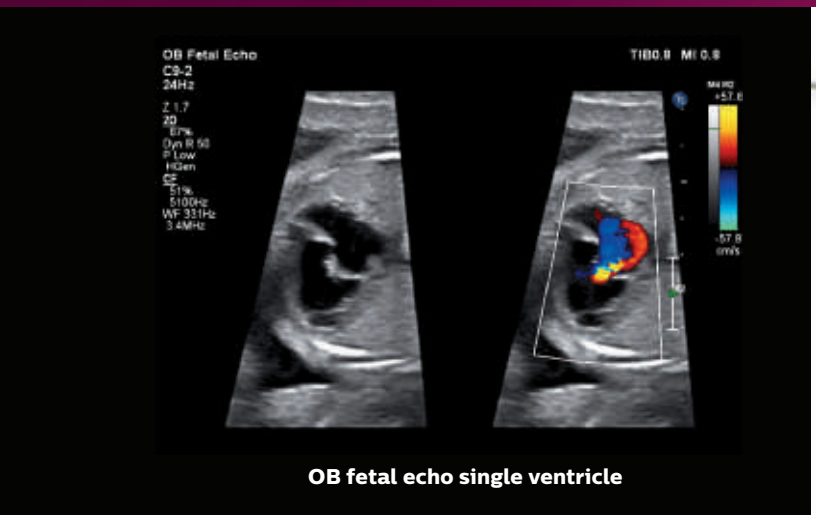
Parasternal long-axis view

S5-1



OB fetal echo four-chamber view

C5-1



OB fetal echo single ventricle

C9-2

Leading-edge xMATRIX transducers for cardiology also include X7-2t for 2D TEE applications.

Designed to reinvent the user experience

EPIQ 5 has completely reinvented the premium ultrasound user experience. Ease of use, workflow, ergonomics, portability – we've revolutionized how you interact with an ultrasound system from every standpoint, and kept it beautifully intuitive.

More than 80% of sonographers experience work-related pain, and more than 20% of these suffer a career-ending injury.[1] The EPIQ 5 tablet-like interface results in dramatic reduction in reach and button pushes, with 40% to 80% less reach and 15% fewer steps.*

Advanced workflow

The design of the platform features "walk-up usability," meaning that users can perform an exam with minimal training.[2] The system offers the automation to drive efficiency throughout exams with features such as Real Time iSCAN (AutoSCAN), which automatically optimizes gain and TGC continuously to provide excellent images in 2D, 3D, or 4D.

Amazingly portable

At just 104 kg (230 lb), EPIQ 5 is lightest in its class and 40% lighter than the heaviest competitive premium system. Easily transport EPIQ 5 on both carpet and tile floors. The monitor folds down to reduce overall system height for transport, and the integrated cable hooks and catch tray are ideal for portable studies. Wireless DICOM further aids workflow.

EPIQ 5 features integrated efficiency tools and and multiple degrees of articulation for scanning comfort.

Library quiet

EPIQ 5 is almost silent when running. A noise test determined that EPIQ 5 runs at 37-41 dB, which is equivalent to the sound of a library.

SmartExam

SmartExam decreases exam time by 30-50%, keystrokes by as many as 300 per exam, and results in a high level of consistency among users.[3] It is fast and easy to customize, providing consistent and accurate annotation, automatic mode switching, and missed view alerts to streamline exams. The result is more time to focus on your patients, increased confidence in complete studies, less focus on requirements, less repetitive motion, less stress, and enhanced schedule maintenance and department efficiencies.

Scanning comfort

Multiple degrees of articulation for both the control panel, and the 54.5 cm (21.5 in) LCD monitor with 720° of freedom allows for ergonomic alignment, whether sitting or standing, for scanning comfort.

Auto Doppler for vascular imaging

Auto Doppler takes time-consuming color box positioning and sample volume placement from ten steps to three steps and reduces the number of repetitive button pushes by an average of 68%.[4]

Active native data

Active native data allows for post-processing of many exam parameters.

Set-up Wizard

Set-up Wizard allows users to step up to the system, easily establish user configurations, and get running quickly.

A tablet-like touch interface allows quick navigation to system functions and results in dramatic reduction in reach and button pushes, with 40% to 80% less reach and 15% fewer steps.*

EPIQ 5 makes it easy to be green

25%

less power

EPIQ 5 is one of the greenest systems we have ever designed. It consumes 25% less power than our legacy premium ultrasound.

1 Society of Diagnostic Medical Sonography, Industry Standards for the Prevention of Musculoskeletal Disorders in Sonography, May 2003.
2 External user study where all users had over 90% success (gold standard in usability) on their set tasks with no training on EPIQ, Jan 2013.
3 University of Colorado, protocols study, Apr. 2007.
4 Auto Doppler clinical study. Dec 2011.
* 2013 engineering study comparing Philips iU22 ultrasound system with EPIQ 5.
† Check for availability in your geography.

Anatomical Intelligence (AIUS) is the heart of EPIQ 5

More data is available than ever before, requiring tools for you to simplify and quicken the process of acquiring reproducible data and turning it into valuable information for your patients.

Intelligence
turning images into answers

EPIQ 5 offers a wide set of easy-to-use anatomically intelligent quantitative tools

At the heart of the powerful EPIQ 5 architecture is our Philips exclusive Anatomical Intelligence Ultrasound (AIUS), designed to elevate the ultrasound system from a passive to an actively adaptive device. With automatic anatomy recognition, protocols for automatic functionality, and proven quantification, exams are easier to perform, more reproducible, and deliver new levels of clinical information.

Using built-in models to drive exam simplification

With AIUS, libraries of organ model data gathered across many modalities create a platform where information from a single exam can be tailored to a patient-specific organ model or Region of Interest that yields useful information in less time, and with less complexity.

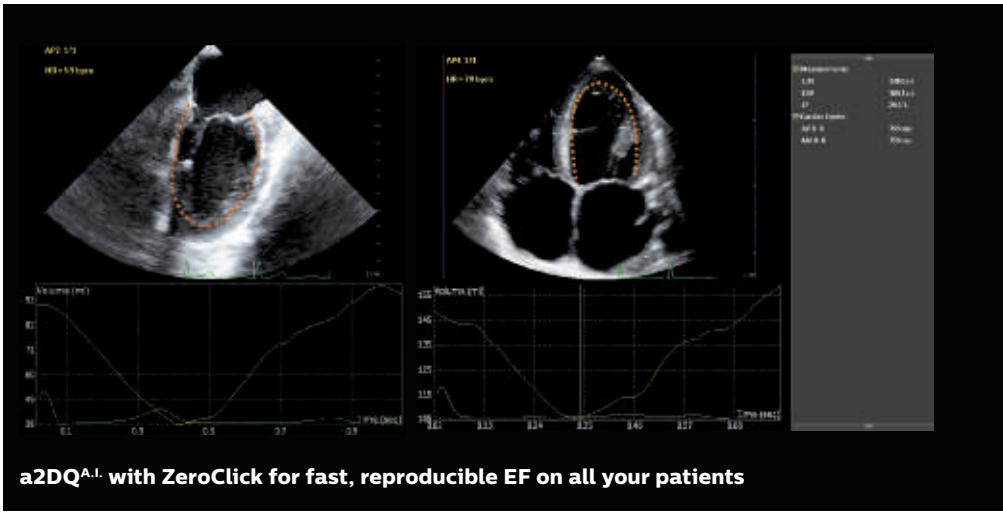
Sophisticated modeling adapts certain atlas shapes to a patient's individual organ using feature data collected over hundreds of patients with various conditions. AIUS ranges from automating repetitive steps to full-blown computer-driven analysis with minimal user interaction – all using anatomic intelligence and all providing the results you need. In fact, many of our tools come with ZeroClick technology,* which means that, once an image is loaded, the tool does it all for you.

*Edit option

Automation

Automated 2D Cardiac Quantification[A.I.] (a2DQ[A.I.]) with ZeroClick technology

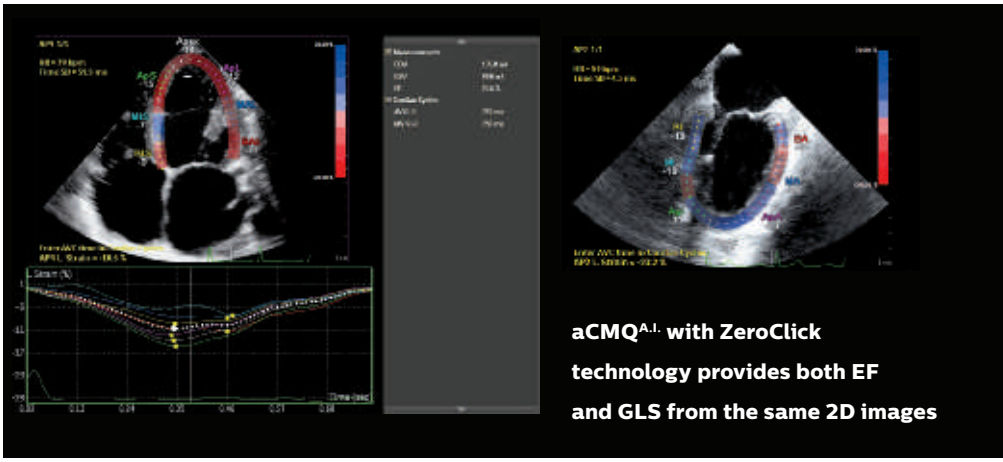
The ideal tool of every echo lab, Automated 2D Cardiac Quantification[A.I.] with ZeroClick technology uses AIUS for an Auto-ROI to drive the Q-App and provide rapid access to proven 2D EF and volumes. AutoEF is available during the study and so fits in with an everyday echo protocol.



a2DQ[A.I.] with ZeroClick for fast, reproducible EF on all your patients

Automated Cardiac Motion Quantification[A.I.] (aCMQ[A.I.]) with ZeroClick technology for adult echo

The ZeroClick technology of the Automated Cardiac Motion Quantification[A.I.] (aCMQ[A.I.]) uses speckle mechanics to provide reproducible 2D Global Longitudinal Strain (GLS) speckle measurements. A proven EF is also calculated by using the Auto-ROI that drives the automation within the aCMQ[A.I.] Q-App.



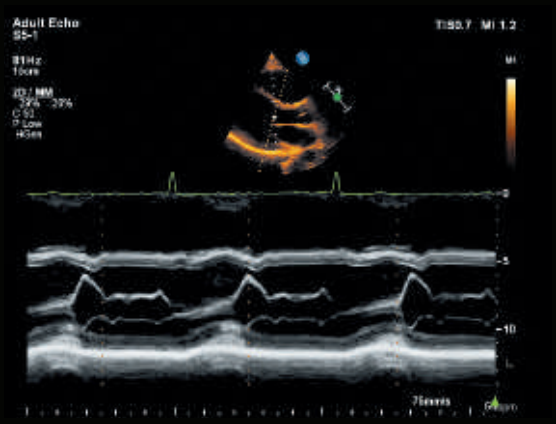
aCMQ[A.I.] with ZeroClick technology provides both EF and GLS from the same 2D images

Q-App quantification applications

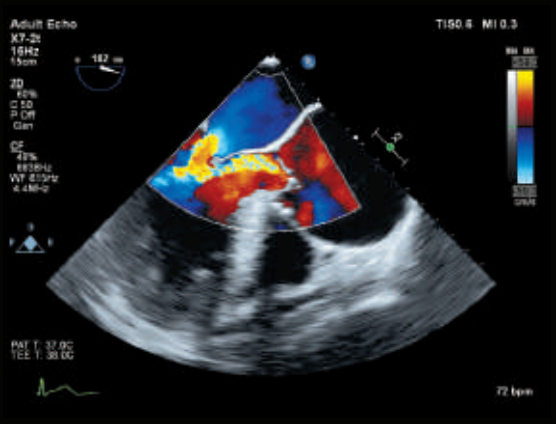
EPIQ 5 offers a wide variety of sophisticated Q-Apps to quantify ultrasound image information.

Q-App	Clinical application	Benefit
• IMT (for vascular)	• Automatic carotid intima media thickness measurement	• Fast and easy access to IMT data
• ROI	• Echo contrast and color images	• Extract acoustic measurement
• Strain Quantification (SQ)	• Measures the myocardial velocity from color tissue Doppler	• Derive displacement strain and strain rate
• CMQ Stress	• Speckle quantification of stress echo image	• Decrease the subjectivity of stress echo analysis
AIUS Q-App		
• Automated 2D Cardiac Quantification[A.I.] (a2DQ[A.I.])	• AutoEF for 2D images	• Fast and reproducible biplane EF
• Automated Cardiac Motion Quantification[A.I.] (aCMQ[A.I.])	• Speckle quantification of global and regional strain data	• Both EF and speckle data simultaneously to assist with LV function assessment

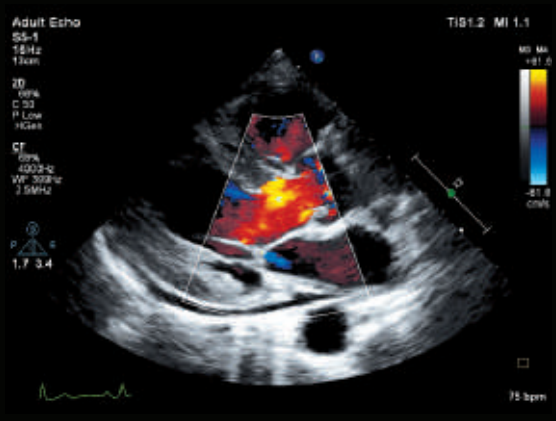
New levels
of clinical information



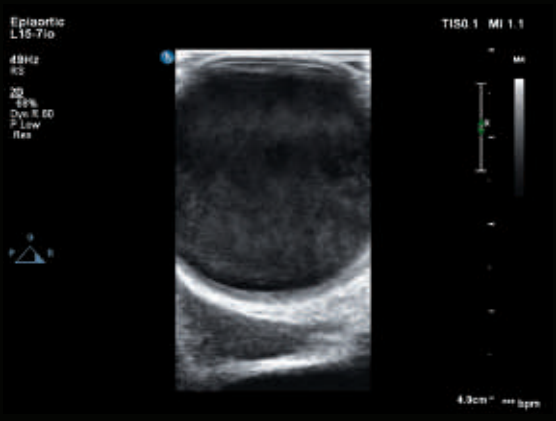
Anatomical M-mode of PLAX



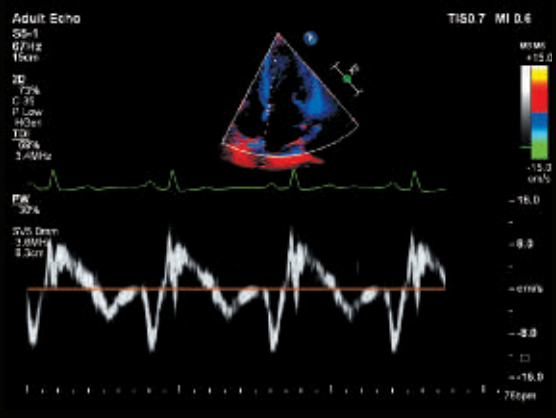
Mitral regurgitation



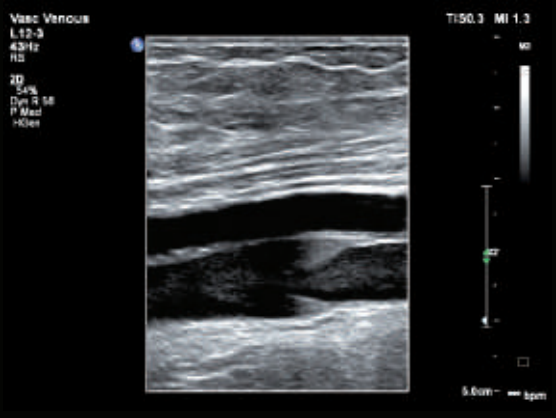
Mitral regurgitation



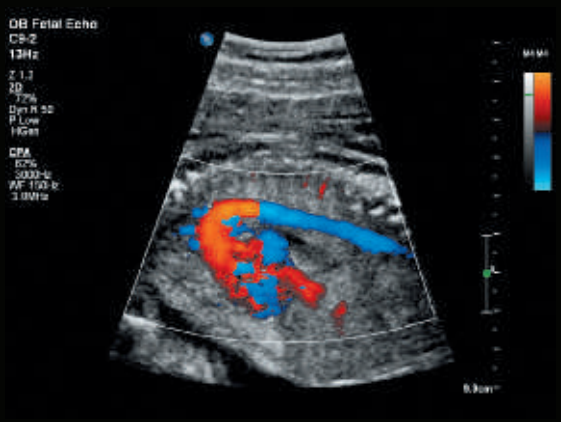
Epiaortic



Tissue Doppler PW

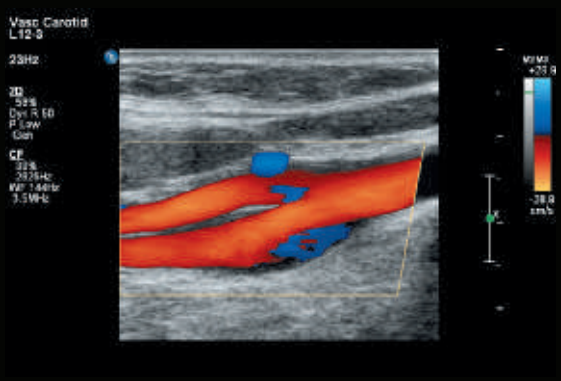


Vascular

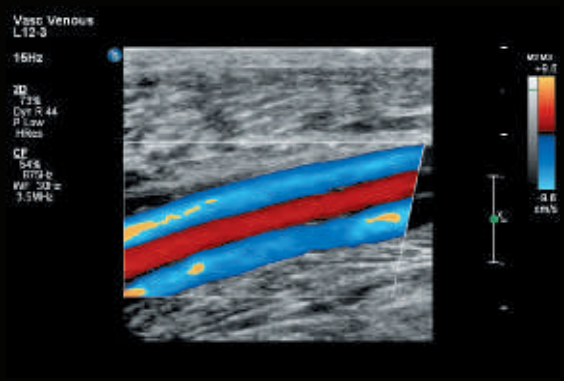


Fetal echo – aortic arch

Fetal echo – four-chamber heart

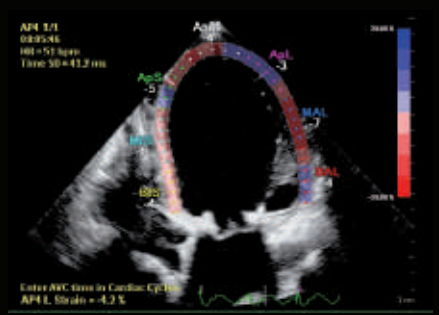


Common carotid artery bifurcation



Posterior tibial veins and artery

Access to multimodality images



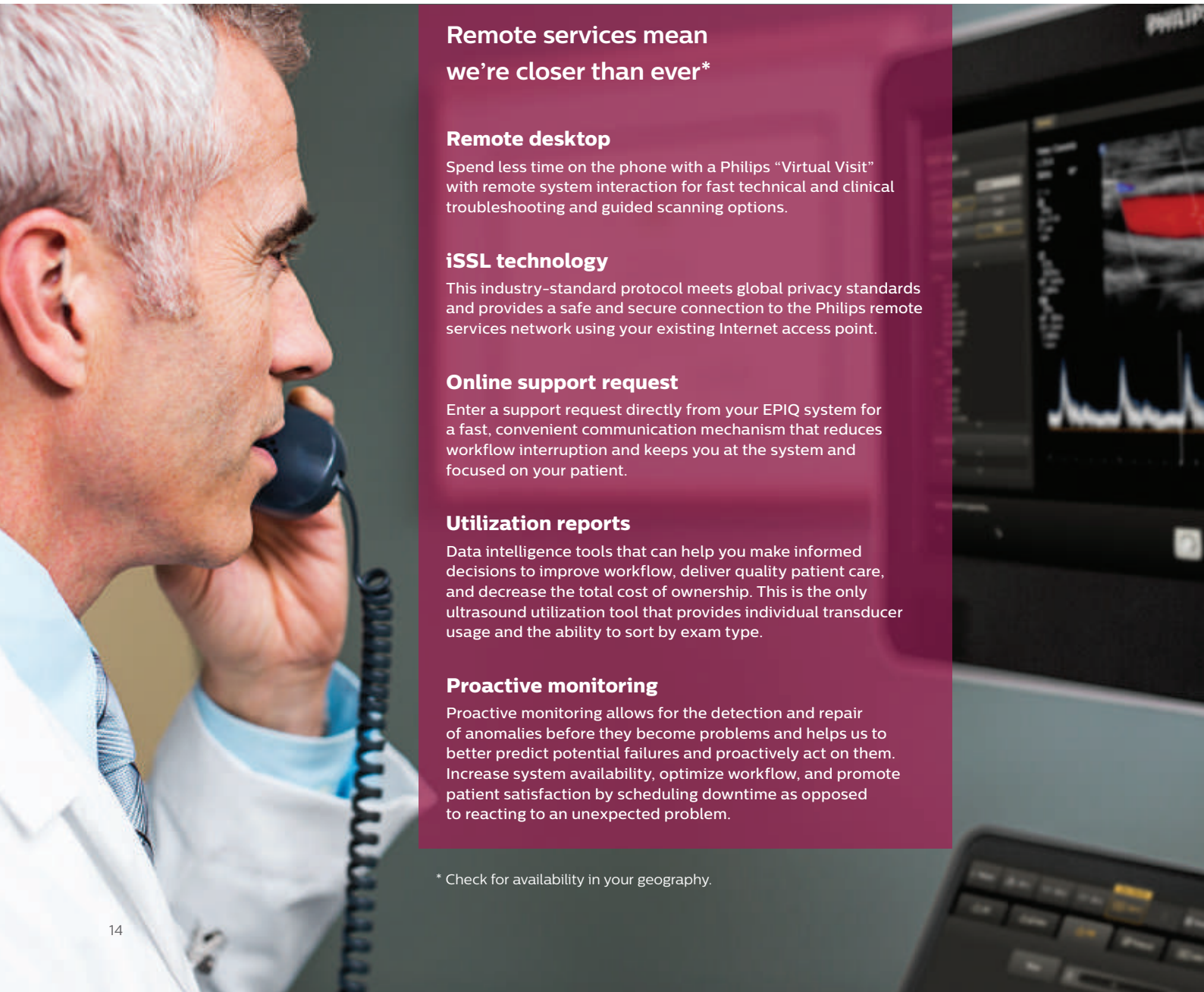
Multimodality Query Retrieve allows side-by-side comparison on any DICOM image.

Use the EPIQ 5 multimodality query retrieve to view DICOM images such as CT, NM, MRI, iXR, cardiac X-ray, and ultrasound. Easily compare past and current studies without the use of an external reading station and even review these multimodality images while live imaging.

Advanced **support services** are proactive and predictive

We understand your challenges: uncertain economic times, changing healthcare landscapes, and the impact of healthcare reform. We know that efficient workflows and system uptime are critical success factors in running an effective healthcare business.

Philips is committed to offering innovative solutions to provide you with world-class services that move from reactive to proactive and with predictive service models that provide high system availability and enhanced workflow to help you deliver high quality patient care.



Remote services mean we're closer than ever*

Remote desktop

Spend less time on the phone with a Philips "Virtual Visit" with remote system interaction for fast technical and clinical troubleshooting and guided scanning options.

iSSL technology

This industry-standard protocol meets global privacy standards and provides a safe and secure connection to the Philips remote services network using your existing Internet access point.

Online support request

Enter a support request directly from your EPIQ system for a fast, convenient communication mechanism that reduces workflow interruption and keeps you at the system and focused on your patient.

Utilization reports

Data intelligence tools that can help you make informed decisions to improve workflow, deliver quality patient care, and decrease the total cost of ownership. This is the only ultrasound utilization tool that provides individual transducer usage and the ability to sort by exam type.

Proactive monitoring

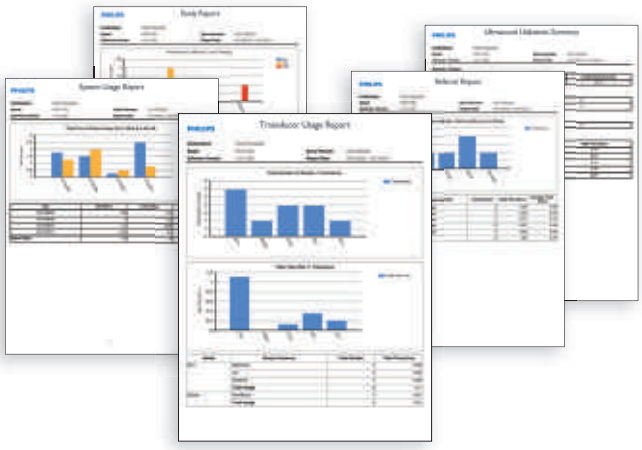
Proactive monitoring allows for the detection and repair of anomalies before they become problems and helps us to better predict potential failures and proactively act on them. Increase system availability, optimize workflow, and promote patient satisfaction by scheduling downtime as opposed to reacting to an unexpected problem.

* Check for availability in your geography.

The remote desktop allows Philips service engineers to gain a live view of your system's console for remote operation, real-time clinical troubleshooting, and issue resolution.

Exceptional serviceability

Philips offers the only ultrasound utilization tool that provides individual transducer usage and the ability to sort by exam type.



The system features superior modular design for rapid repair, getting your system up and running quickly.

Intelligent software architecture

Software is easily optimized, maintained, and restored by the service user without risk to patient data, giving you peace of mind when dealing with software anomalies and confidence that your data is safe.

This software architecture takes patient data privacy to a new level. Patient data is stored on a separate partition and physical location to provide protection and ease of removal, providing you total control of your data.

Clinical education solutions

Our comprehensive, clinically relevant courses, programs, and learning paths are designed to help you improve operational efficiency and enhance patient care.

Please visit **www.philips.com/EPIQ**

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