EchoInsight®

EPSILON IMAGING®

Efficient Integration of Echocardiographic Strain Imaging Helping to Enable Improved Clinical Patient Management at University of California San Diego

The University of California San Diego (UCSD) has always been on the forefront of echocardiography strain imaging adoption. Initially, the team at UCSD investigated strain imaging through research activities. Over the past five plus years, the team implemented this important measurement into its clinical adult echo program. It is evident that strain imaging is a powerful analysis tool that has brought valuable benefits to the UCSD adult echo program and aids in the way their clinicians manage patients.[1]

Megan Kraushaar, the Interim Manager and Technical Director of Non-Invasive Imaging, and Monet Strachan, formerly Manager & Technical Director CV Imaging (now Director of Echo Programs at UCSF Medical Center) at UCSD Sulpizio Center and team chose to standardize on EchoInsight® Visualization and Analysis software as an application integrated within its syngo Dynamics CVIS.

"We needed a strain imaging solution that could integrate easily into our Siemens syngo Dynamics health imaging and information reading and reporting environment," said Monet Strachan. "Over the years, EchoInsight has proven to deliver vendor agnostic accurate global longitudinal strain imaging with excellent serial comparison capabilities to

monitor percent change from baseline, and all in an easy-to-use user interface. When we learned about EchoInsight's ability to launch as a third-party application from the syngo reading environment, the decision was simple—we would use EchoInsight for our strain imaging clinic."

Echocardiography strain imaging has now expanded to outpatient facilities, creating greater access to strain imaging across UCSD's patient population. As clinical use of strain imaging becomes more prevalent, UCSD continues to see the benefits for their adult echo program.

About Sulpizio Cardiovascular Center at UC San Diego Health

The Sulpizio Cardiovascular Center is a hub for world-class healthcare, along with research and innovation. The physicians and researchers are on the front lines of fighting heart and vascular diseases—at the patient's bedside and in the research lab. The technology used, and techniques and treatments administered are setting standards in cardiac care.

1. Epsilon Imaging Website: Supportive Research. (2022, May 24) https://epsilon-imaging.com/evidence/supportive-research/

Integrating Echo Strain Imaging for Clinical Use at UCSD

With ASE guidelines and recommendations along with many published, peer-reviewed research studies, the team at UCSD made the decision to implement strain imaging for left ventricular wall assessment into its clinical program in late 2016. Initially, Megan Kraushaar, Monet Strachan and team worked with Dr. Anya Narezkina, Assistant Professor of Medicine, Division of Cardiology at UCSD, to begin implementing strain imaging analysis within their cardio-oncology program.

Dr. Anya Narezkina said, "There is a tremendous need for early detection of cardiotoxicity in cardio-oncology patients to help risk-stratify patients and possibly start cardio-protective medications. Multiple studies have shown that decline in strain predicts future drop in LV ejection fraction (LVEF)."

With the success of applying strain imaging to the cardio-oncology patient community, the team expanded to other patient populations such as cardiomyopathies, pulmonary hypertension, transplant, aortic stenosis, and structural heart.

"Since first applying strain imaging to our cardio-oncology patients, we have seen strain imaging providing benefits to how we analyze and interpret echo studies for a variety and evolving set of indications," said Megan Kraushaar. "Recently, our team applied strain imaging to assisting us with setting proper timing on interventional surgeries. It has proven to be a vital tool for patients with mitral regurgitation that, for example, sometimes have "increased pre-load" with EF that is falsely padded. Planning for mitral clip or surgical intervention with the assistance of strain imaging is especially important for this patient population."

## Easy and Fast Workflow Critical for Clinical Implementation

Since the full integration between EchoInsight and *syngo* Dynamics became available a few years ago, implementation of echo strain imaging into UCSD's routine clinical echo workflow has increased. More importantly, last Fall, the UCSD adult echo lab was upgraded to EchoInsight Zero Footprint (ZF), the newest platform from Epsilon Imaging. "The biggest benefits of the EchoInsight ZF upgrade for our team came down to greater accessibility, offline capabilities and a better, streamlined integration with *syngo*," Megan Kraushaar said.

EchoInsight ZF makes it easier to incorporate strain imaging into the echo lab and can be accessed on any *syngo* Dynamics workstation via its floating license architecture.

"This upgrade has elevated our strain program and we have significantly increased our echo strain study volume in recent months," according to Megan Kraushaar. "The upgrade to a zero footprint configuration and with the deep integration within *syngo* has dramatically improved access to strain across the entire UCSD network as well as increased efficiency for our echo lab."

EchoInsight ZF allows the UCSD team to take echo strain analysis offline to spend more time finishing the analysis. This has proven to be especially useful during the COVID pandemic. The analysis can be performed out of the room to reduce exposure between patient and clinician.

With EchoInsight and *syngo* Dynamics, UCSD can procure and audit secondary captures from EchoInsight back into the *syngo* Dynamics environment, which has been an efficiency gain in their busy echo lab.
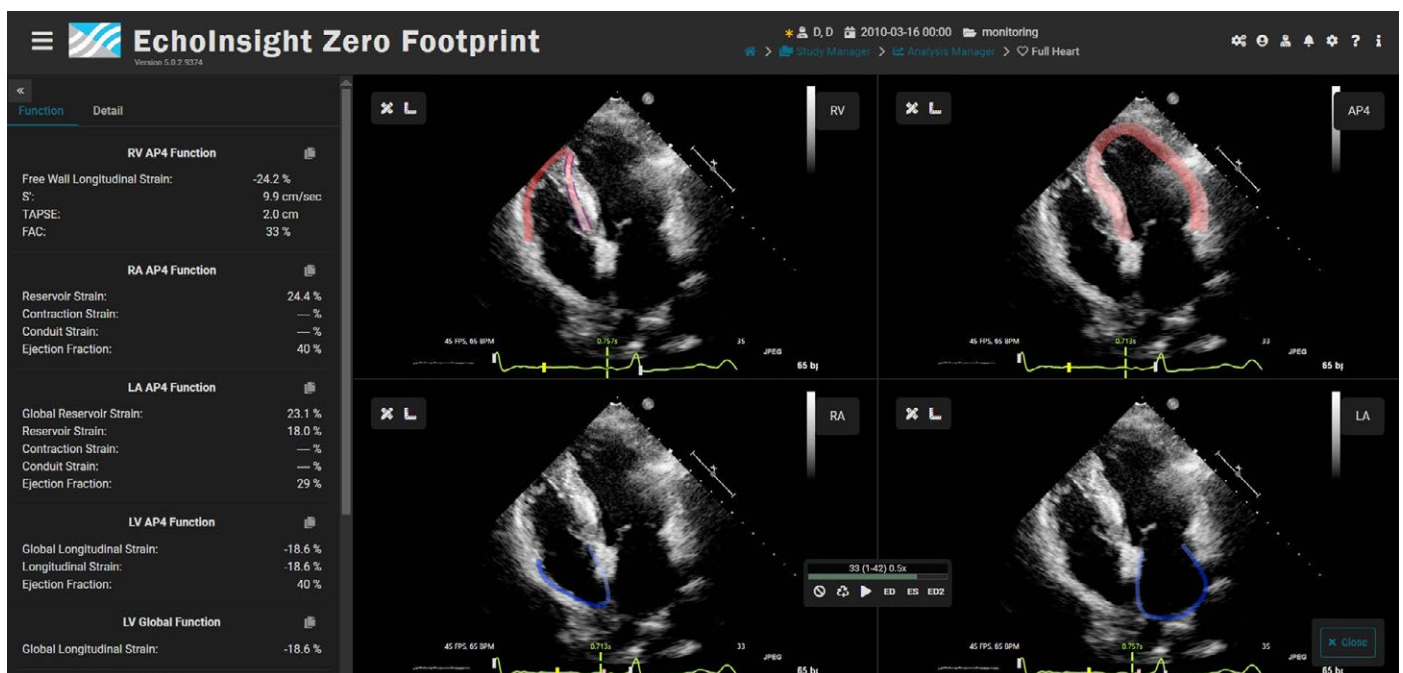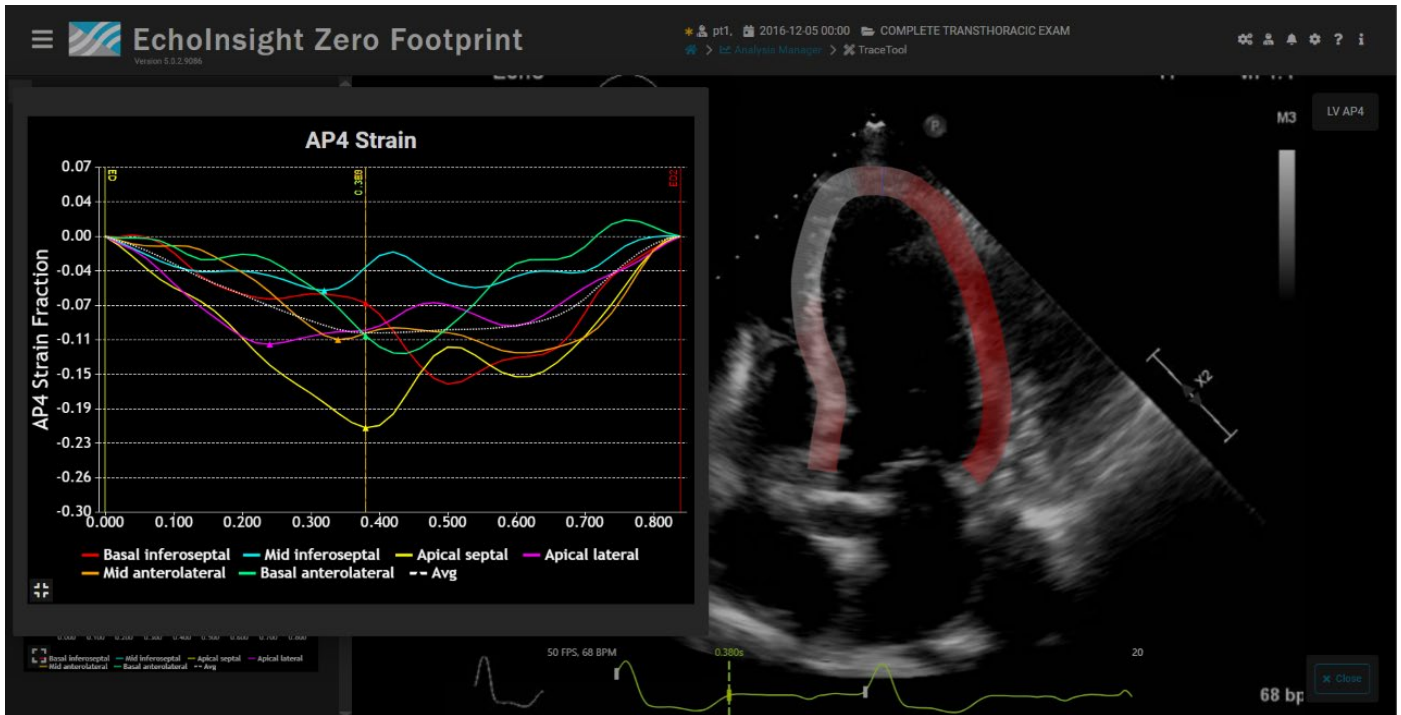
Kraushaar said, "The workflow with DICOM SR and secondary captures has helped to make the staff at UCSD more comfortable with strain analysis and reporting. Being able to see a moving clip in real time with the strain ROI in *syngo* Dynamics has helped tremendously with verifying the tracking rather than a Bull's Eye that is static. This is especially helpful if I, for example, acquire strain analysis on a study and one of our echocardiographers needs to finalize the study. The echocardiographer simply needs to review the strain clips on *syngo* Dynamics and if edits are desired, they click a button to launch EchoInsight and edit. It is a streamlined workflow that works well for our team," Megan Kraushaar added.

Where UCSD is Going: Imaging with Purpose

"Applying strain imaging allows sonographers to image with a focus and a purpose, thinking much more of function and possible impacts of the disease," said Megan Kraushaar. "When the measurement of strain imaging is applied to echocardiography, we can monitor patients more closely. With the help of the integration between EchoInsight and *syngo* Dynamics provided to our team, strain has become a critical tool used to help guide clinical decisions at UCSD."

As the evolution of strain imaging progresses at UCSD, Megan Kraushaar and her team are beginning to see a need where strain imaging applied to the entire heart could become more of a standard for certain clinical indications. The team at UCSD has created a successful and standardized practice with their echo and strain imaging program.

"The seamless integration of *syngo* Dynamics and EchoInsight has brought a meaningful change at UCSD and has helped enable the efficient and productive lab we have today," said Megan Kraushaar.
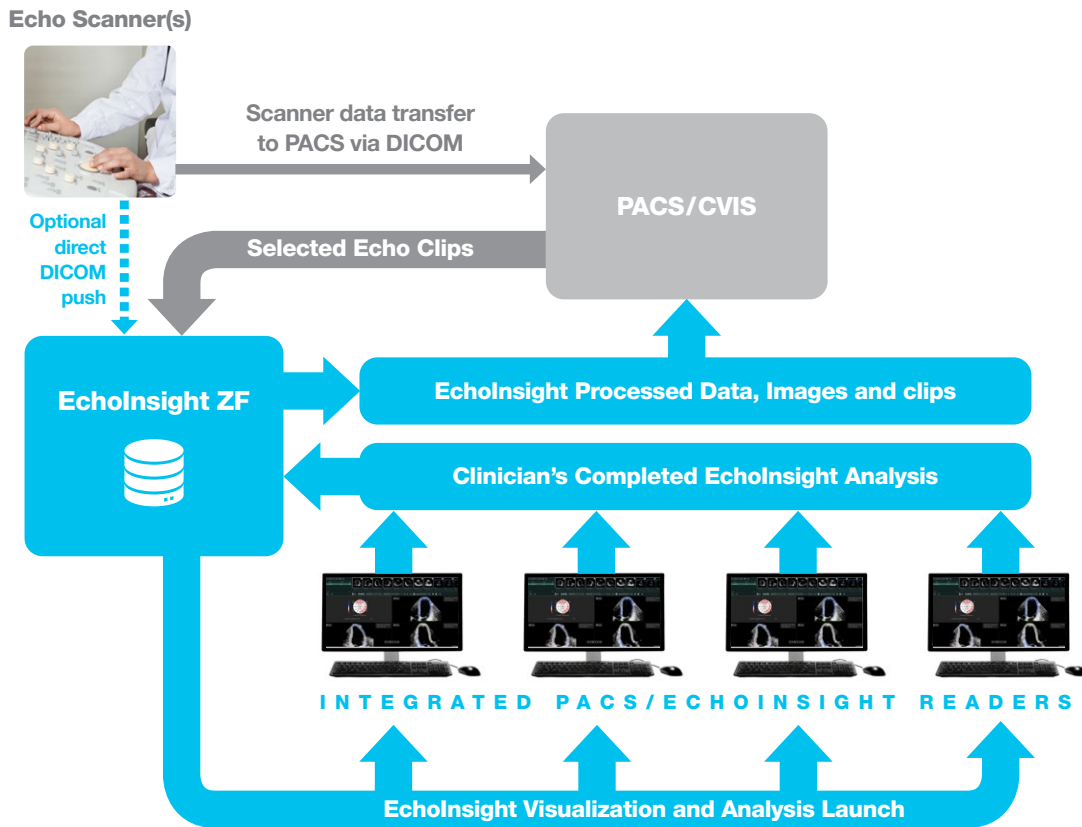
About EchoInsight and *syngo* Dynamics

Epsilon Imaging and Siemens Healthineers have partnered to deliver robust echocardiographic analysis tools designed to provide better patient management. *syngo* Dynamics effortlessly deploys EchoInsight for strain imaging with the click of a button, providing customers access to important diagnostic tools and increased workflow efficiency anywhere with a workstation. Designed specifically for the clinical environment, *syngo* Dynamics and EchoInsight meet the clinical needs and challenges of echo programs of any size.

Features Include:

- **Process DICOM from ANY ultrasound scanner**
- **No limitations on studies—current or old**
- **Validated strain imaging for all four chambers of the heart**
- **Automated measurements based on ASE Chamber Quantification Guidelines**
- **Innovative seamless workflow integrated into the *syngo* Dynamics user interface**
- **Amend prior analysis through a single click on finalized EchoInsight processed DICOM clips within *syngo* Dynamics**
- **ZERO additional software/configuration required on *syngo* Dynamics workstations**

How EchoInsight Works

Echo Scanner(s)

Scanner data transfer to PACS via DICOM →

PACS/CVIS

Optional direct DICOM push

← Selected Echo Clips

EchoInsight ZF

EchoInsight Processed Data, Images and clips

Clinician's Completed EchoInsight Analysis

INTEGRATED PACS/ECHOINSIGHT READERS

EchoInsight Visualization and Analysis Launch

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