



ECHSA

EUROPEAN CONGENITAL HEART SURGEONS ASSOCIATION

October 23rd, 2022
Athens, Greece

Dear ECHSA Members and friends,
Dear ECHSA Congenital Database Participants and Users,

I am writing to inform you about what I believe is a very important new service developed in collaboration with our Scientific partners at MIT, Professor Dimitris Bertsimas and his team, namely, a quality initiative branded as TrueHQ which will become available by September to our ECHSA Database participants, the Center Quality Assessment Report.

As you know from previous communications and reports at our Annual Scientific Meetings, ECHSA has been collaborating with the Massachusetts Institute of Technology (MIT) team of Professor Dimitris Bertsimas, a world expert on Artificial Intelligence (AI) and Machine Learning (ML), developing pioneering tools based the ML methodology of Optimal Classification Trees analyzing the congenital heart surgery data in the ECHSA Congenital Database. These innovative tools have been applied successfully to produce models predictive or risk after congenital heart surgery. These models are devoid of the limitations of traditional medical statistics (such as the erroneous assumption of risk factors being linear and additive) and are highly accurate, thereby serving to facilitate decision making for personalized patient management. Furthermore, we have developed techniques of ML-based analysis of center-specific and case-mix adjusted hospital performance, providing valuable tools for center self-assessment and quality improvement initiatives. Attached you will find two papers describing this work recently published in the World Journal for Pediatric and Congenital Heart Surgery.

As the ECHSA Congenital Database is committed to providing feedback of value to its participant - users, each ECHSA Database participating center will soon receive a confidential, automatically generated AI and ML- based Center-specific and case-mix adjusted Quality Assessment Report. This Report, which will be produced yearly, will summarize the unadjusted and adjusted performance parameters of the Center and indicate where it stands overall with reference to other Centers. Most importantly, the Report will highlight specific patient cohorts of better-than-expected case-adjusted performance as well as cohorts in which performance may be less-than-expected, thereby suggesting specific targets for further analysis and quality improvement efforts.





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The Quality Report will be accompanied by a feedback questionnaire.

Furthermore, as our work progresses, Centers will have the opportunity to access on-line instruction in this innovative assessment technology and to request further optional details regarding their performance parameters.

We are very excited about these powerful data analytic capabilities which will become available soon to our ECHSA Database participating Centers!

With warmest regards,

George Sarris

A handwritten signature in blue ink that reads "George E. Sarris, MD". The signature is written in a cursive style and is underlined with a blue line.

ECHSA President
ECHSA Congenital Database Committee Chair

