# SAC´s Electronic Medical Record and the Change in Clinical Research Scenario

*Historia clínica electrónica SAC y el cambio de escenario de la investigación clínica*

The initial project of the electronic medical record (EMR) of the Argentine Society of Cardiology for outpatient clinics will be launched at the Argentine Congress of Cardiology. The EMR is not yet a usual practice in hospitals and outpatient clinics in our country; at best, it helps medical practice but is still not a relevant source of medical information. Up to the present, the role of EMR is mostly related to administrative or commercial tasks. It is not necessary to insist on the importance of a universal EMR. The Ministry of Health and the sanitary regions are making efforts, which are still scarcely promoted, and the lack of medical statistics in our country is a matter of concern and complicates the rational management of health care resources.

In the last European Congress of Cardiology I attended a debate in which directors of the registry programs in Sweden, Denmark and the United Kingdom discussed the validity of myocardial infarction registries. The SWEDEHART is a Swedish program that currently registers all heart surgeries concentrated in only 8 centers, all primary coronary interventions (PCI) in 29 centers and acute coronary syndromes in 71 centers. The registry combines prospective registration records with the information retrieved from the EMR and other sources of information. During the debate, the panelists remarked that it is necessary for each institution to know the level of quality of the service provided in order to implement self-correcting strategies. There has been significant improvement in the levels of quality over the past decade. Denmark is another example, using EMR for almost 40 years; each person has a single number which covers medical aspects, prescriptions, employment information, courses and incomes. Obviously, the individual information is not accessible to the investigators; privacy is absolutely respected with multiple preventive measures, and its violation is severely punished. An example of their database power is the study of 121,280 patients with atrial fibrillation discharged between 1997 and 2006, among which 73,538 were not under anticoagulation treatment. The CHADS2 score of embolic risk was prospectively evaluated in these patients and the investigators could demonstrate that the CHA2DS2-VASc is more adequate, particularly to categorize patients with low scores. This study laid the foundation for changing all the international guidelines for the management of atrial fibrillation (BMJ 2011;342:d124 doi:10.1136/bmj.d124). The United States has an EMR law, and in a few years, there will be no other form of registry. Sweden has also started randomized studies based on registries. The first to be published has been the TASTE trial, a controlled randomized study designed to evaluate the value of thrombus aspiration during primary PCI for myocardial infarction [N Engl J Med 2014:21;371(8):786]. Each center received the indication of thrombus aspiration or PCI alone by telephone randomization. The research work ended there; all the information about follow-up and events was obtained from the EMR; the study did not require specific forms or monitoring, and resulted very economic. It was thus possible to include 7244 patients. All 29 centers in Sweden with primary PCI facilities participated in the study. Among a total of 11,709 procedures, 7244 were prospectively included in the study. The result was striking, as it ruled out the usefulness of this expensive practice recommended on the basis of trials with a few hundreds of patients. Thus, we are entering a new era predicted decades before by Gianni Tognoni, who expected daily clinical practice to be the real scenario of clinical research. Other European countries also have national registries, as the MINAP registry in the United Kingdom, with potential capabilities for this type of trials.

What is the aim of the Argentine Society of Cardiology EMR project?

We started from a problem-oriented medical record developed by Sergio Montenegro based on the outpatient medical record used at the Hospital Italiano de Buenos Aires. Files separated by conditions, as heart failure, syncope or atrial fibrillation, have been added to facilitate collection of the patients' data and, in turn, to build a database ready for analysis. The medical record will not only facilitate appointment scheduling, visualization of the open problems, history, tests and treatments, but also, the specific files will allow registry standardization and guide doctors who are consulting guidelines, algorithms, scores and other sources.

The pilot phase will start in October, when a group of collaborators will evaluate the EMR in daily practice. Then, after progressive adjustments, we hope that it may be a contribution to the entire cardiology community of our country and perhaps, other Spanish-speaking countries. We know that electronic registries will progress during the next years, with different formats and developers, and different designs will be preferred due to institutional reasons. Apart from configuring a practical clinical record, our intention is to standardize fields and details that may be used,

whatever the medical record, for saving in the same way, for example, the information about atrial fibrillation. This has been the strategy of the PINNACLE registry of atrial fibrillation. Commercial electronic medical records compatible with the registry are publicized to cardiologists in the United States. SAC´s EMR will be constructed with the cooperation of its users. As we count with the programming sources and the enthusiastic support of its designers, we may add modifications and structures to make it friendlier to the needs of the cardiologist.

We are entering a new phase of medical information and registries, with the door open to evaluations of quality with self-corrective interventions, as well as community-based studies, easy and oriented toward the patient needs. We hope that these tools will allow us to work at a higher level and help to improve the quality of our medical practice, avoiding errors and improving the service provided to patients, which is the final goal of our actions. You are all formally invited.

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