

# “Clinical Archive”: A computerized medical record of patients in apheresis

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## Abstract

Today the medical records of sick or injured persons who need apheresis treatment are not always the same in the various Transfusional Centres for lack of dedicated software.

The Transfusion Centre of Bari Policlinic has tried to define and create a computerized medical record in order to have a valid tool to better report information both during clinical treatment and after for their archives.

The software, called “Clinical Archives”, can store clinical, therapeutic and administrative data. It has a good user interface, it is easy and intuitive in its various steps and procedures and it can always be expanded thanks to the connection online with other computerized systems (cell separators, laboratory, etc.). The software is entirely home-made and it is our intention to distribute it free to those who wish it for an analysis of its potentials and possible improvements and/or extensions.

With this software we have tried to make an important contribution to the technological evolution of our scientific community in the field of Clinical Governance and Outcomes.

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## 1. Introduction

Everyday a blood bank deals with an enormous volume of data which are connected to the production and use of blood components and/or blood products. The software now used in the different centers is good at this!

But the situation starts to become rather difficult and not managed in the same way when we talk

about patients who come to such medical facilities to be submitted to procedures of therapeutic apheresis! In fact not all the software now used are suitable to this purpose, but it happens that they are forced to this purpose or, in the best of hypotheses, Excel spreadsheets are also used. In some cases paper books (files) are still used to register the patients' names and the procedures performed. Although some developers of cell separators have equipped their machines with software to report data on procedures, these are simply report cards.

The consequences in today's technological and computerized world are:

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- Lack of tools for a rapid search of data about the procedures performed because only a database enables people to get information out of it very quickly.
- Storage of paper materials (archives, books, files etc.) is subject to destruction and is always difficult to search.
- Necessity of space to store the medical records.
- Difficult for “Clinical Governance”.

The home-made medical record “Clinical Archive” was planned and realized in our Center, it is software that incorporates elements of clinical character (written by the doctors) elements of therapeutic character (written by the nurses) and elements of administrative and managerial character.

It represents a computerized substitute for the systems of paper documentation!

It furnishes the means for:

- Record information during a clinical trial;
- Filing of records in a reliable way;
- Facilitating the search for information;

It also guarantees:

- Easy reproduction of the data (backup);
- Transfers through nets;
- Protection of access from users who are not authorized (password).

Every test made on the patient is stored in the computerized clinical record that becomes the most important tool of sharing for people who have a job in our blood bank. They do it together in such a way that each does a part of it.

Every professional writes a functional diagram of her competence for every therapeutic passage, according to the case and to the procedural method. When the patient finishes therapeutic procedures, the information stored allows us to follow the proper procedures of report productions, resignation and account for the department and the administrative offices, but also furnishes data in order to make budgets, surveys, statistics and everything else. For this reason it represents a fundamental tool to offer a complete and punctual service both to the patient, that will have the opportunity of knowing all the information concerning his/her pathology and treatment, and to the hospital authority, that can file the data related to all the procedures and to access them, for statistic or managerial ends.

In the definition, planning and structuring of this clinical computerized record we have tried to pursue the aim of furnishing a tool that answers the following requests:

- **Facility** in the use of the data and in their management
- **Precision**, particularly in the planning of the procedures (data storage, therapeutic measures, notebook of the following appointments, etc.)
- **Completeness** but easiness; it enables one to see all the data for each patient of the Blood Bank.
- **Familiarity**; because the logical sequence of acquisition of the information and the decisional process are always the same and it also allows simple and intuitive navigation
- **Accessibility and enforcement** in an intranet connection with ODBC (Open database connectivity: protocol standard that allows the applications to be connected to a big range of file server or external databases) to the SW of the cell separators, managerial plants, central laboratories
- **Protection**; accessible only to the authorized users (password)
- **Inalterability**; to guarantee the certifying and legal value
- **Usefulness** of statistic functions (clinics, administrative and research)

This software has been realized with a simple, intuitive and at the same time strong architecture that allows us:

- To create the case history replacing the traditional paper record without renouncing completeness and without many more problems for the operators.
- To guarantee standardization of the information, with the purpose of facilitating the interaction among the involved professionals and to manage the formulation of the therapeutic programs.
- To include in the record the clinical data of competence of every user (doctor or nurse) according to a model structurally and functionally suitable.
- To recover the data for the Managerial Informative System and for the control quality (survey SDO, DRG, SISS).
- To have reports and statistics both on paper and through the web too (attached excel and/or word and/or pdf, e-mail) or ready to be delivered also on magnetic support, to the colleagues of other blood banks.

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