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MANAGEMENT AND SAFETY TO ELECTROMEDICAL EQUIPMENT

1.1 Introduction

The main objective of this paper is to define the subject of the planning and management of the technological patrimony, with particular regard to safety and to the prevention of electric risks due to use.
For the past twelve years is in charge of the functional set-up and management of electromedical equipments operating at St. Anna Hospital and associated periferical units.
Takes part in National Technical Commission for the study and application of electrical safety standards (CEI) to electromedical equipment and is a member of the Technical Commission of the Emilia Romagna Region.
In the last few years the region of Emilia Romagna has been dwelling on the problem of the management of technology and it has worked in order to render the process of innovation quicker and more efficient.
It has been trying to guide the UUSSLL along a common line as regards planning in the acquisition of quality products in the use of technology in the field of health and prevention, as well as in the means and forms of quality control in order to guarantee its improvement in time.

1.2 Management: an overview.

Managing technology means: working out planning arrangements in advance, considering that only highly qualified personnel who is fully conscious of the situation of the Health Board and who can relate with the different aspects of the organisation: sanitary, technical and administrative, will be able to cope.

GENERAL SUGGESTIONS FOR MANAGEMENT

PLANNING	
Technological Investment	Technological Maintenance
Evaluation: 1) Technical 2) Clinical 3) Economic - managerial	1) Maintenance 2) Safety

This means that there must be media information as well as government support in order to analyse and intervene on costs and benefits.
From this we can deduce that all decisions must carefully ponder the choice of technological investments that have to be taken from the various stand points of technical, clinical, managerial and economic considerations.
In many cases, experience has shown that, erroneously, requests coming from the various wards are sorted out bureaucratically and given precedence only on the declaration on the part of the ward itself that it is something needing urgent attention.
When planning one must consider the maintenance and safety of technological equipment.

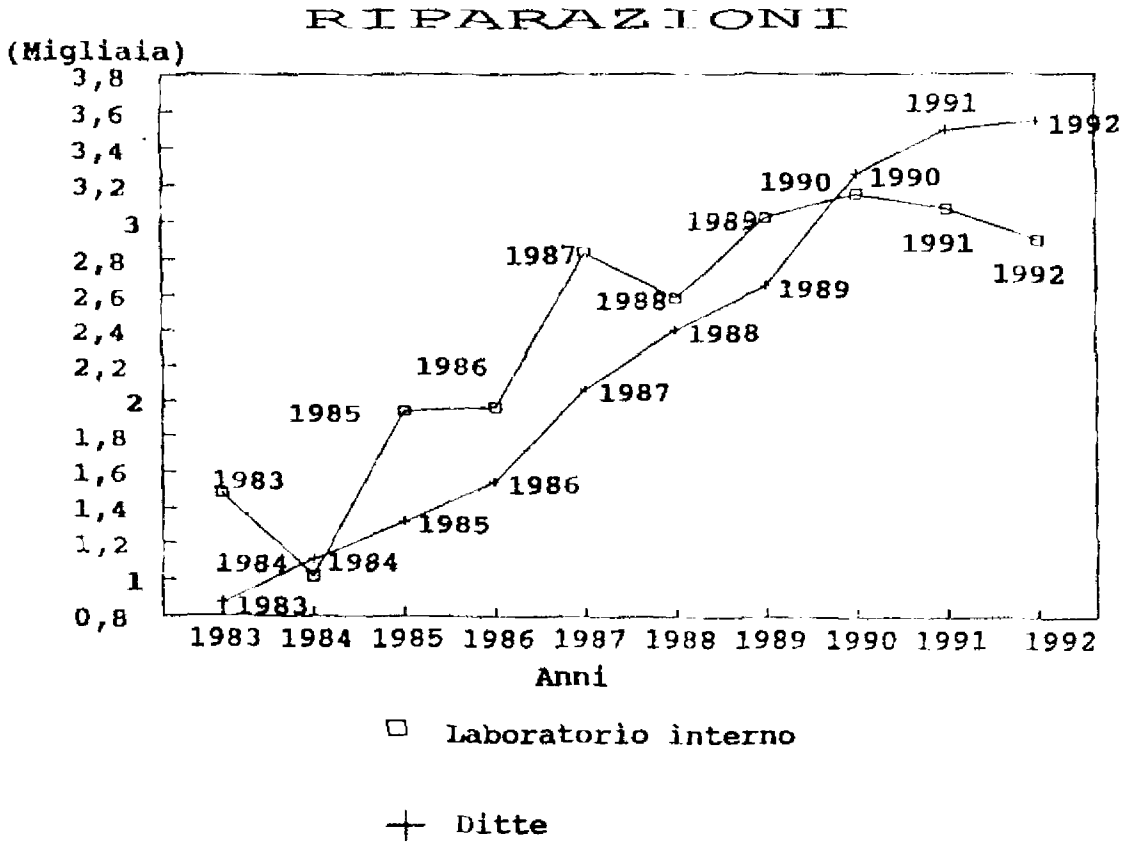
Another important feature is the management of technology.

MANAGEMENT	
Service	Equipment
1) Efficiency 2) Effectiveness	1) Maintenance 2) Safety 3) Advice

We must be very careful in making the right choices in labour organization so that the economic investment will yield a positive turn out as regards efficiency and effectiveness.
All equipment must be kept in good running order and routinely checked to safeguard its efficiency.
To this end, the presence of qualified technicians actively employed, who can satisfy all needs and can intervene with the suppliers and manufacturer in order to keeps standards high and up-dated, is absolutely compulsory.
The technical assistance service within the Hospital has the following tasks:
- first it provides in-house maintenance to machines
- secondly, works to ensure safety; in other words, effects acceptance controls to newly purchased machines and other tests to assure maintenance grade to machines in time, conforming to regulations and standards being introduced year after year
- offers consulting in connection with hospital needs.

BIOMEDICAL TECHNOLOGY MAINTENANCE	
<u>External Service (with Suppliers):</u>	<u>Inside Service:</u>
Contracts	Maintenance Safety Consultations

Maintenance should be divided in two stages: the first one involves the manufacturers who are called to intervene by contract, the second involves the inside services which answer to the required needs, such as: urgent maintenance, safety controls, various consultations.
This form of maintenance guarantees a better management, prevention of damages and a more efficient, total respect of safety.
Needless to say that without this kind of service it would be impossible to manage correctly all the technological features of a hospital from the inside.



As shown by the slides, approximately 6000 service calls are performed during the course of one year, of which 3000 effected by in-house Hospital staff; this means a considerable reduction in idle-machine-time and, financially speaking, a saving of money since supplier technicians charge ten times as much for servicing.
Another important point regarding equipment, dealt here in two essential words, is safety: to safeguard it, all equipment must be tested: when purchased and it must be periodically controlled in time.

EQUIPMENT SAFETY	
Testing for approval	Periodical control

When purchasing any equipment, it is important to verify that existing safety standards have been respected by performing safety checks immediately on delivery and, of course, routine machine controls must be conducted in time, especially to the most distinguishing and fundamental parameters.

1.3 Safety

The Technical Service of USL 31 of Ferrara has been working constantly in the last ten years on safety measures and it has been trying to enhance its experience in this field, pointing out the possible risks and planning the best solutions.

STANDARDS
IEC 601-1 C.E.I. 62-5 Particulars (62-..)

The basis is represented by the IEC 601-1 Standard published in Italy as CEI 62-5. An accurate study of these norms with the relative particulars has led to the development of the techniques for acceptance testing and periodic safety controls.
In matter of safety, we must take into account all those elements that even superficially come into contact with the patients and with the operators.
We have noticed that safety measures are often barely taken into consideration in hospitals and they are undervalued since, in most cases, people still reason according to an outdated mentality instead of keeping up with the evolution of technological progress, which advances day by day, and which helps us to march along to the forefront and maintain a vanguard position.

SAFETY IN EQUIPMENT

Hospitals	Equipment controlled
1	400
2	500
3	300
4	250
5	300
6	100
7	3500
8	1500