



## DEVELOPMENT OF A QUALITY ASSURANCE SYSTEM FOR RADIOTHERAPY

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### Abstract

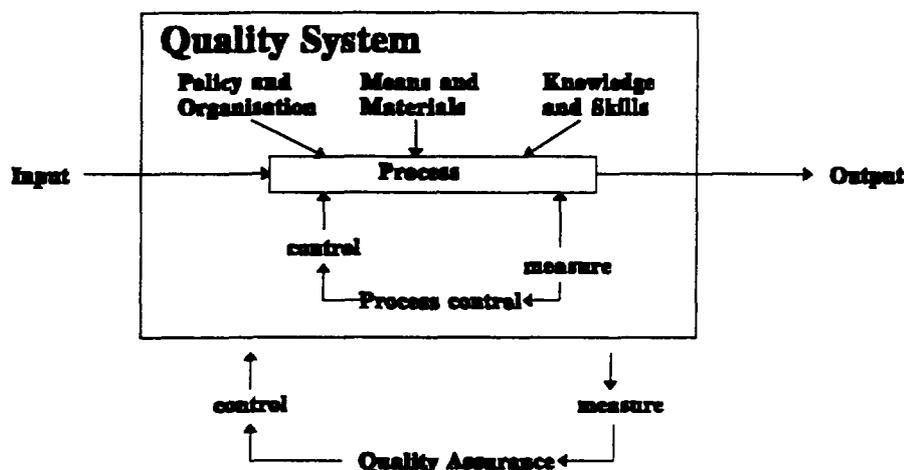
Due to 1996 legislation in the Netherlands, every health care facility should have a quality assurance program. Because it is difficult to measure the quality of the product of care, a choice is made to focus on the process of care. For this purpose PACE was founded. (PACE is a Dutch acronym for *Project AC*creditation) with as founding members:

Public Health Insurance Council, TNO health research, 4 university hospitals and 4 large general hospitals.

For in total 19 services and disciplines quality assurance standards were developed by groups in six of the hospitals.

### The quality system

The ideas followed are according to the ISO 9000 series of standards originally developed for industrial production and services. In this system there is a primary process in our case patient care with patients as input, and treated patients as output. During the process different parameters can be measured and used as a feedback to control the care process.



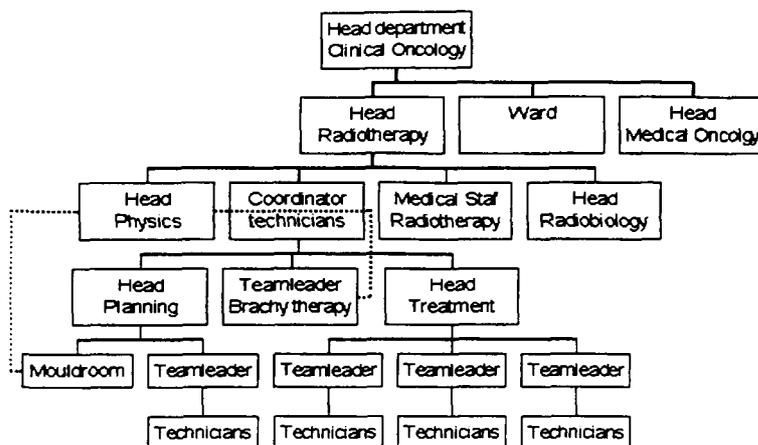
The elements that influence the process are the policy and the organisation structure of the department, available means and materials, and the knowledge and skills.

Implementation of a quality system is only successful when it is clear what the position of the department is and what the aims are. For instance what type of patients do we want to treat, what types treatments do we want to perform. The institute can be a centre for bone marrow transplantation and so the department has to perform total body irradiations. It can be better to refer some patients, with retinoblastoma, to an other institute with more expertise in that field.

It is possible that for research reasons certain groups of patients are recruited in special, and others referred to other centres. Training doctors asks for special rules in the procedures.

The structure of the department can be described by the *hierarchical*, the *functional* and the *operational* relations of staff and management. The structure of the department can be described by the *hierarchical*, the *functional* and the *operational* relations of staff and management. Who is responsible for what task and what are the competencies. How are communication between different disciplines organized. Who is responsible for what task and what are the competencies. How are communication between different disciplines organized.

Hierarchical relations can be mapped in an organisation chart.



From an operational point of view there can be project groups that have links through and outside the department independent of hierarchical structures.

After the organisation charts are made all the responsibilities, tasks and competencies of each staff member must be determined. For every task one and only one should be responsible, but several people can have an advisory task. The physician is responsible for the medical decisions, but technicians and physicists have an advisory function. The secretary is responsible for ordering stock and the others have advisory functions here. It must be clear how the responsibilities and competencies are regulated, who can start or stop a treatment, who take a treatment machine out of service.

Means and materials include the technical infrastructure, such as housing and transportation, the machinery e.g. treatment machines and instruments. The maintenance schedules and the schedules for replacement must be documented

There must a guaranty that exploitation goods such as films, disposables, are available in the department on the right moment.

Knowledge and Skills have to be kept up-to-date for all staff also in non-training departments. Educational entrance criteria must be determined, there must be training programs, excess to literature and access to congresses and post graduate courses also for non-research workers.

Important is to define a system for exchange of knowledge between the different groups in and outside the department.

The process control is the most intriguing part of setting up a Quality system. All activities concerning the patient, from the moment he or she enters the department until the end of treatment should be described. For this reason we need protocols, procedures, guide lines and check lists for diagnostic and therapeutic procedures, for information to the patient, reporting, privacy protection, waiting list management, referral of patient to and from the department, for safety and protection of patient and personnel. Every step of the patient through the process can be described in flow charts, where for every step the documentation to be filed, and the protocols that must be used are indicated.

The last step in maintaining a Quality System is, the control of the System. On a regular time basis all protocols and handbooks must be updated. The system must be evaluated by internal audit and if necessary corrected.

And last but not least the important thing in building a Quality system is that every one in the organisation is motivated to act along the lines of the Quality System, without that the system will fail.