SHORT PAPER

Quality Implementation in Health Physics Unit, Cosenza Hospital

Accreditation Program as Quality Improvement instrument

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Key words: Quality, Accreditation Path, Health Physics Unit
Parole chiave: Qualità, Accreditamento, Fisica Sanitaria

Abstract

Achieving high levels of quality in healthcare, which could be measurable, is increasingly important at present and is dictated by the radical changes of the welfare system imposed today by the well known economic constraints. However, even in the ongoing legislation, the practices concerning the verification and review of the quality of health care has had a major impact in the galaxy of Health. On the one hand, the citizen is developing an awareness of the possibilities of choice (Empowerment) between a plurality of providers of healthcare services, on the other hand providers themselves are obliged, within the logic of a global market, to retrain their offers to respond satisfactorily to the needs of citizens. The purpose of this study was to demonstrate how the adoption of Operational Procedures, following the granting of a certificate of accreditation to the Unit of Medical Physics, has changed the approach to the work on the part of health workers, in the direction of a dynamic quality improvement.

Introduction

Nowadays, achieving measurable high quality levels in the health field is becoming increasingly inescapable. This need is dictated by the radical changes of citizen welfare systems which imply stringent economic constraints.

However, even with these limits, the practice of verification and promotion of the Health Service (HS) quality has a major impact on health systems.

In fact, on one side, the citizens, especially in mature social contexts, are developing awareness of the possibility of choosing (empowerment) between a plurality of providers of HS. On the other side, providers themselves are almost obligated, in the global market logic, to aim for a redevelopment of their offer to respond satisfactorily to the needs of the citizens.

The aim of this paper is to explain how the accreditation path (1) of the Health Physics Unit (HPU), and the adoption of Operational
Procedures, have changed the approach of health workers toward their professional activity, promoting benchmarking for improvement.

Definitively, the main point of the need for accreditation is the alignment and compatibility of procedures adopted in the daily clinical practice, and the quality assurance in the performance of institutional tasks.

**Methods**

The path followed by the HPU intended to adopt a Quality System formalized in a specialist branch having a multidisciplinary nature because of its intrinsic characteristic. All that because specific competence is a synthetic complex knowledge system of physics, health physics, radio-protection, chemical and protectionist legislation relating to physical risks.

The HPU supports welfare and clinical activities concerning patients’ protection and operators’ safety in the use of physical agents. In addition to the peculiar specific location, it bears the cost of technical support and strategic direction for procedural compliance in order to comply the current legislation.

In agreement with the document “Specific Requirements for Accreditation of Health Physics Services”, developed by the Department of Health Protection and Health Policy of Calabria Region (2), we can attest that HPU is organized in structural terms and into the following activity areas:

- Radiation protection
- Physics of Radiology
- **Physics of Radiation Therapy (Radiotherapy)**
  - Physics of Nuclear Medicine.

The involvement of the Medical Physicist is strictly required in radiotherapy, in nuclear medicine practices, in diagnostic and interventional radiology because of the high doses of radiation onto the patients. His collaboration is important to carry out quality assurance programs and for patient’s safety and protection, when evaluating doses and administering them.

That system requires complex internal rules, sometimes burdensome for application in clinical practice. In addition, the specific current legislation (3, 4), revisited and in progress, is constantly changing, following European Union (EU) Recommendations, which add heavy restrictions and operational requirements in the management and traceability of radioactive compounds as well as in the patient management when submitted to nuclear and diagnostic radiations.

In this context, the responsibility becomes accountability for citizens and future generations, in relation to the potential environmental risks of certain applied procedures.

In the audit planning is required, for every operator, precision and accuracy in monitoring the Standard Operating Procedures, for an assessment linked to the planning of objectives, indicators and standards for measuring (5).

The goal is to achieve high standard “quality techniques” in such a way to activate technical support and adequate procedures. This path allowed information, training and improvement, in a circular continuum of health activities where “doing” is replaced by “acting” (awareness about the consequences of doing), along with the sense of responsibility towards colleagues and patients and accountability is the inspiring paradigm.

This path adopted national (6) and international (7, 8) guidelines.

The involved operators pursued personal objectives in the process by introducing accessibility, appropriateness, competence, continuity, effectiveness and safety concepts (8).

Finally, they laid foundations for a Continuous Quality Improvement (CQI) (9)
by providing for the adaptation and updating of organizational procedures and verification of their implementation.

In the process undertaken, absolute priority has been given to the methodological approach of POU problems. Any process patterns gave a central role to the operator but mainly ensured professional participation.

Therefore, it was almost natural to go to a participatory approach with the proactive operator involvement and collegial activity implementation.

In the context of accreditation the concept of quality has been superimposed to the concept of operators’ safety and satisfaction. For this reason were analyzed positive and negative results, paying attention to patients’ outcome.

Results

The HPU has implemented a Quality handbook inspired by chapters of Emilia Romagna Region handbook scheme (10), containing explicitly the Mission and Vision.

The Quality and Accreditation Unit (Q&A) has supported the HPU path in the project, providing consulting activities for the process systematization. All this occurred by:

- identifying, monitoring and developing the various Areas concerned, on the basis of the top management indications and the POU instances;
- organizing regular briefings with the staff and the various professionals involved;
- providing methodological support in audit organization and implementation;
- supporting the POU in the drawing up of the handbook and procedures and supporting the acquisition of all the documentary evidences necessary to achieve the objectives.

A hierarchical and overall functional organization chart has been drafted, and operational procedures in the various branches of activity and standard products were defined (Tables 1, 2).

The processes of planning, organizing and managing resources have been enunciated. A section dedicated to the measurement, analysis and improvement processes has intended to monitor the processes and products with non-compliance control data analysis, corrective and preventive actions. Card-process has been adopted (Table 3) for the management and verification of all the operational aspects.

The aim was to ensure that the principles enunciated in the handbook were really owned by the PUO.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Adequacy of instrumentation dedicated to dosimetry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic</td>
<td>Adequacy of instrumentation dedicated to dosimetry</td>
</tr>
<tr>
<td>Rational</td>
<td>The availability of free calibrated instrumentation is a prerequisite to perform dosimetry and quality control of radiotherapy equipment</td>
</tr>
<tr>
<td>Minimum Essential Instrumentation</td>
<td>Precision electrometers, set of rooms to adequate ionization for absolute dosimetry; Water puppet (measurement of dose curves in the depth and dose profiles); dosimetry systems for dose testing in vivo; semiconductor diode, tld, dosimetry area with X-ray film</td>
</tr>
<tr>
<td>Testing and Standards</td>
<td>The presence of calibration certificates</td>
</tr>
</tbody>
</table>
The HPU was, subsequently, subjected to a third-party audit, of experimental nature, on a voluntary basis, carried out by a Regional Commission, made up of Auditors enrolled in the National Health Register.

The group was coordinated as internal function by the Quality Unit of the Hospital, and as an external function by the Head of Emilia Romagna Health Care Accreditation Agency.

**Conclusions**

The audit showed important information related to the strengths and to the critical issues that are a true representation of Health Physics Unit activity.

**Strengths**

The detected strengths in the audit phase were:

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**Table 2 - Example of Indicators and Product Standard**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Delivery time of physical plan of radiation treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic</td>
<td>Adequacy of processing time and therefore the delivery of treatment plans</td>
</tr>
<tr>
<td>Rational</td>
<td>Short delivery time can make a good insert of new patients being treated by decreasing the wait for patients already scheduled</td>
</tr>
<tr>
<td>Physical Dedicated</td>
<td>2</td>
</tr>
<tr>
<td>Standard Delivery of the Services Required</td>
<td>urgent treatments: without waiting, palliative treatments: one day, programmed radical treatments: weekly delivery</td>
</tr>
</tbody>
</table>

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**Table 3 - Example of Document Management Procedure**

<table>
<thead>
<tr>
<th>Document management procedure of radiotherapy treatment plans</th>
<th>Guaranteeing the work and delivery times for radiotherapy plan, respect of waiting lists and the principles on transparency implied by existing legislation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drafting physical Medical</td>
<td>Processing with regards to the applicable rules and procedures, with the collaboration of the radiation oncology Department</td>
</tr>
<tr>
<td>Verification resp. Quality(RQ) /Head POU</td>
<td>Verification: for fit with applicable rules / regulations, it is consistent with other procedures, than formal requirements. Signature and date.</td>
</tr>
<tr>
<td>Approval head POU</td>
<td>Signature and date.</td>
</tr>
<tr>
<td>Issue head POU – RQ</td>
<td>Registering in the departmental procedures and in the documents for Quality.</td>
</tr>
<tr>
<td>Distribution pM/RQ</td>
<td>Agreement about final distribution list in the Unit procedures</td>
</tr>
<tr>
<td>Storage rQ</td>
<td>Approved original document.</td>
</tr>
<tr>
<td>Archive rQ</td>
<td>Paper form and / or computer readable form (original and/ or scanned)</td>
</tr>
</tbody>
</table>
• Identification of the HPU Responsible for the Quality (RSQ)
  • Clear definition of delegated responsibilities
  • Identification of internal and external interfaces
  • Government of the internal and external communication
  • Government of the equipment supplied with documentation of their scheduled maintenance (documentation and inventory)
  • Evidence of a monitoring scheme / mentoring for new staff
  • An Information System sufficiently developed
  • Management of documentation under control
  • Presence of procedures for the assets realization and adequate publication inside the HPU
  • Annual Report Drafting of the activity results, discussed with the Corporate Strategic Direction

Points of Weakness

Identified Weaknesses were:
• Numerous benefits, provided by law, are not reflected in the National Tariff of Health services and therefore revenues are undersized
• Lack of organizational formalized plans
• Structural limitations and insufficient space for the HPU and shortage of customs staff
• Inadequate formal plan for equipment’s acquisition
• Inadequate documentation’s evidence for the control of results related to Quality Control, physical surveillance of radiation protection and environmental dosimetry.

From a retrospective review of the implemented accreditation we can conclude that the application of a rule system within a HPU creates order in the processes and provides a methodological approach governed by activities.

The identification and explanation of the processes allowed to identify easily the grey areas where is necessary to intervene with improvement plans.

The identification of the standard products is an added value and allows an objective evaluation based on measured data.

Periodic re-evaluations and revisions of the handbook is, finally, an “appointment” for the improvement of service quality, unavoidable to ensure high professional and technical standards in service provision.

Riassunto

Implementazione della qualità nella struttura di Fisica Sanitaria dell’Azienda Ospedaliera di Cosenza: Il percorso di Accreditamento come strumento di miglioramento

Raggiungere elevati livelli di qualità in campo sanitario, che siano oggettivamente riconosciuti, è attualmente sempre più importante ed è dettata dai radicali cambiamenti dei sistemi di welfare imposti oggi giorno dai noti vincoli economici. Tuttavia, pur nell’evoluzione normativa attuale, la prassi inerente la verifica e la revisione della qualità delle prestazioni sanitarie ha avuto un impatto notevole nella galassia della Sanità. Infatti, da una parte il cittadino sta sviluppando la consapevolezza delle possibilità di scelta (Empowerment) tra una pluralità di soggetti erogatori di prestazioni sanitarie, dall’altra parte gli erogatori stessi sono obbligati, nella logica di un mercato globale, a riqualificare le proprie offerte per rispondere in modo soddisfacente alle esigenze dei cittadini. Lo scopo del presente lavoro è stato quello di dimostrare come l’adozione di Procedure Operative, dopo il riconoscimento di una certificazione di accreditamento presso l’Unità Operativa di Fisica Sanitaria, abbia modificato l’approccio al lavoro da parte degli operatori sanitari, nella direzione del miglioramento dinamico della qualità.

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References


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