# The Local Procurement Co-ordinator in the Italian system: role and tasks

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## Introduction

The increase in the number of organs and tissues transplants is one of the major goals of the National Health Service. In order to attain it, it is necessary to support and foster donation, that is presently the main source to meet, at least partially, the needs of patients on the waiting lists.

However, it is now necessary to optimize the use of available organs, in addition to the various development programs aiming at increasing the number of donations. Thus, a major prerequisite is the need for adopting and abiding by codified and effective operational procedures that can ensure a smooth and fruitful development of the donation-removal-transplant process. The failure to be punctual, the lack of respect of operational protocols, the poor collaboration between those who take part in the event, can jeopardise the outcome, causing even, sometimes, the loss of the donor.

These last few years, in all countries, the number of organs removed from cadavers has been constantly increasing. This trend has also been pointed out in Italy where, from 1992 to 2000, it has been possible to monitor the progress of activities over the whole national territory, thanks to the creation of a national registry for transplant and organ removal activities at the Italian National Institute of Health. This survey has evinced a progressive and steady increase both in donations and transplants.

Due to this considerable increase, our country reached a total of 329 utilised donors in 1992 (5.8 p.m.p.) and 914 donors in 2001, with a 177,8% increase over nine years. Presently, our country falls into line with the European average, but, when compared with other important EU countries, ranks above advanced health systems such as that of the United Kingdom, Germany, Switzerland and the Netherlands.

However, despite this upward trend, the number of utilised donors meets a mere 30% of demand, in Italy at least, even if it should be stressed that most Northern Italy regions have reached and exceeded the European average.

Many inititiatives have been launched, in order to foster transplant activities as much as possible (a steady increase in using elderly donors, surgical techniques for graft division, removal from living donors, awareness of health workers, direct involvement of local hospitals and institutions, awareness of population, etc.). On one hand these initiatives are surely technically relevant and on the other mobilize, sensitize and make aware the general public of the social importance of this activity, but they are not enough to bridge the gap between the number of necessary donors (30-35 p.m.p.) and the number of effective donors (17,1 p.m.p.).

This gap does not allow to meet the needs of patients that enroll on the waiting lists, each year, in any district of the country. Thus, the lack of cadaveric donors is the main obstacle for further development of this therapeutic practice and is therefore right to wonder which are the causes that prevent or hinder proper health actions.

**State of the art**

Being understood that there is a need for increased social awareness and a major stress on social importance, assistance and ethics in choosing to become donors, and that this is a pivotal element for potential improvement of present activity levels,

In the current situation, the process that leads from organ removal to transplantation has some critical steps to be taken, for example the timely detection of potential donors and his/her management: a potential donor, it is worth mentioning, is a patient admitted at an intensive care unit for brain injury, whose death is diagnosed and certified under 1993 Law 578 (1) and Ministerial Decree 582 dated August 22 1994(2). In order to improve both the detection of all potential donors and his/her operational management, one of the best adopted strategies is the creation of a new professional character, the "Local Co-ordinator".

Law 91 dated April 1 1999 (art.12) states that every five years a Local Co-ordinator, is chosen and appointed among Health Unit physicians that have acquired experience in the transplant field(3). He/she is therefore a professional figure deeply acquainted with the operational activities of this sector.

In order to better outline the role and tasks of this new professional figure inside the transplant process, three fundamental questions are to be answered:

- Who is the Local Co-ordinator?
- Where does he/she work?
- What does he/she do?

Indeed a fourth question should be asked "How does he/she work?", but the answer is the result of activity assessment and check.

**Who is the Local Co-ordinator?**

Law 91 dated April 1 1999 does not list adhoc qualifications for local co-ordinators, but it lays down that they should be selected among the Health Unit physicians with sound experience in the transplant field. This translates into a precise directive that cannot be disregarded. Thus, he or she should be a skilled physician, so much the better if he/she has a good image inside his/her work environment and is fully acquainted with the units that potentially generate donors and with all the operational steps of the process he/she will take part into. Since he/she is a landmark for the whole structure where the activity takes place and for all the problems that may arise, he should be present, co-operative and resolutory (no co-ordination is as simple as it may seem and much more time is usually necessary for co-ordinating the process of potential donation).

Eventually, the local co-ordinator is the only responsible person in the hospital and should guarantee the full working order of the whole donation mechanism, but also a qualified and proper clinical assistance to the potential donor, in order to maintain organs in the best possible conditions.

It is obvious that, because of the role and assigned tasks, the person responsible for procurement is a key link in the donation-removal-transplant chain.
Thus, the use of a full-time professional, devoted to the donor's clinical management and to the plan, organisation and running of local co-ordination, although it is not preliminary question, is a fundamental pre-requisite for a valuable and efficient organisational framework.
From a formal point of view, the local co-ordinator is appointed by the General Manager of the Health facility, heard the opinion of the Regional Co-ordinator, through a special resolution act. The local co-ordinator, while carrying out one's duties, is dependent on the Medical Management of the Health Facility where the activity is carried out and co-operates strictly with the Regional Centre.

Where does he works?
The Local Co-ordinator carries out his activity inside the hospital. However, in some scarcely-inhabited areas with few hospitals, a single inter-hospital co-ordinator can be appointed or an Area Co-ordinator that allows different hospitals to share a common service. In order to fix the place of work for the co-ordinator, it is necessary to single out the intervention areas.

The co-ordination network as a whole includes two main sectors. The so-called procurement area, that is the subject of this article, and the allocation area. The Local co-ordinator only works in the so-called procurement area, at least in most cases. As a consequence, intensive care units, the neurotrauma units and intensive therapy units are the usual ground for Local Co-ordinator action. The other units of the hospitals cannot however be disregarded, as they can generate tissue donors.
Inside an hospital, the Co-ordinator will have to interact with different specialists from different units: it is therefore necessary to establish a fruitful relationship for subjects sharing.

**What does he/she do?**

Several and important are the tasks and functions incumbent on the Local Co-ordinator and the complexity of this role entails that the choice of this professional has to be adapted to territory and structural environment, that can be different in the various Health Facilities. Referring to article 12 of Law 91, dated April 1 1999, the Local Co-ordinator has the following tasks:

a) ensuring the immediate communication of data concerning donors, through the information transplant system, to the jurisdiction Regional or Inter-regional Centre and to the National Transplant Centre for organ allocation;
b) co-ordinating the administrative procedures related to organ extraction;
c) keeping relations with the donor's family;
d) organising information campaigns, fostering education and cultural growth of population as far as transplants are concerned over the jurisdiction territory.

Besides, if the most has to be made out of this professional, also in order to justify his role, a more integrated and complex reading of the law has to be made.

Spain is a global reference model, with 33,6 p.m.p. effective donors in the year 2001 and in this country the total procurement responsibility is incumbent on local co-ordinators and evidence has shown how successful this choice has been (4).
Indeed, who can better know limits and values of a workplace than a local health worker? However, this feature should be coupled with a knowledge of the total process leading to transplant and therefore: the functioning of units that can potentially spawn donors, internal and external services taking part in the process and the reference persons for each phase of the process.
Thus, if these concepts are shared, the role of local co-ordinators is not so difficult to be outlined. However, a good co-ordinator should behave properly on the basis of his/her professional and human experiences.
As a general rule, the Local Co-ordinator should always take into account the possibility that all the brain-dead persons can potentially be organs and tissues donors, with no limitation as concerns age or other clinical counter-indications. If necessary, it will be proper to ask advice to one's Regional Centre, before taking any initiative that could discard a donor (eligibility evaluation and organ acceptance are tasks for transplant centres).
Moreover, the possibility of a multi-organ removal should be kept in mind, without however ruling out the possibility of a single-organ extraction for elderly patients. The most recent experience shows that liver is frequently eligible for removal even from donors in their eighties, a classic case of single-organ removal.
Another feature should be a great readiness to help, without interfering with other people's work and at the same time decision-making capability in those situations that often seem difficult to be solved (if during a procurement process everything goes well, surely some problem will come up before everything is over).
Once these rules have been set up, in order to propel the search for all potential donors, the Local Co-ordinator should desireably highlight ideal paths inside the hospital, followed by emergency units in charge of brain-injured first-aid patients. This would allow him to have real-time notice of patients that could become donors and their exact localisation inside the hospital. It will then be up to him to implement strategies for monitoring the trauma-affected patient with a steady check on the clinical course. In this connection, co-operation with Health Management and instrumental diagnostics services (neuroradiology, CAT) can be useful in order to set up a registry of neuro-injured patients whose clinical course is daily monitored. The opportunity of having notice of deaths occurred in different hospital wards during the previous night is as useful, in order to detect all potential donors for tissues alone.
The co-ordinator should thus set up and put into operation information channels, in collaboration with the regional Centre and/or the voluntary associations, in order to spread knowledge about clinical, technical and legal aspects of organ and tissues removal and transplant among local health workers, so as to encourage a better awareness of donation and transplant, in the respect of personal beliefs.

He/She should also adopt operational protocols and codes of conduct aimed at ensuring a smooth and clear execution of operational procedures for alerting a) the medical team for brain-death diagnosis and death certification, b) the operating theatres for subsequent organ removal and c) launching initiatives in order to support donors' families for their needs of information and assistance (returning of the body, exposition site and instructions for funeral service).

Through the sensitization of each professional figure, he should above all enhance the collaboration of laboratories that carry out haematochemical and instrumental analyses necessary for a first evaluation of donors, as well as the pathologic anatomy essential in some doubtful cases.
Therefore, the presence of a potential donor should be timely reported (after the brain death diagnosis) to one's Regional Reference Centre, supplying all the available information, necessary for a first evaluation of donors (when news are given, blood group, age, cause of death, anthropometric and haemodynamic data should be available).
Then, under article 23 of law 91, dated April 1 1999, the closest relative has to be informed that the patient under brain-death testing has been taken into account as potential organ donor (normally this conversation takes place after the first brain-death test) and communication should be given, once the procedure has started, to the Regional Centre of the end time of brain-death diagnosis and thus the probable time of removal.
As concerns persons under the responsibility of Judicial Authorities, the authorization has to be required to the Judge in service, through the Health Management.
He should take care of the proper functioning of all organisational aspect such as the removal and transfer to the Regional Centre of lymphonodes and/or blood samples (under the rules established by RRC) for donor's tissue-typing and their cross-matches with recipients.
Eventually, the records of removal have to be collected and trasmitted to one's Health Management and verification that they are properly classified and filed, so as to be available whenever necessary.
After all, during the operational phase and all the transplant process, the Local Co-ordinator is the main actor and reference person for donor's families, for the Regional Co-ordination Centre and for the surgical removal groups that should be properly assisted (possible further analyses, logistics, etc). This entails the need to assign this task to a skilled and competent physician.
Capability and competence are pre-requisites, since local co-ordinators could be directly involved in the clinical management of donors, that often implies a cardio-respiratory intensive therapy not aiming at limiting intracranial hypertension and brain injuries but at maintaining a proper systemic perfusion of the donor.
Thus, co-ordinators should co-operate in monitoring and assessing the main vital functions that allow to maintain the organs to be removed in the best possible conditions.
Among these, we should surely mention:

- haemodynamic monitoring, that includes the control of systemic blood pressure; the control of central venous pressure and when needed the pulmonary arteries pressure (PAP); the pulmonary artery wedge pressure (PAWP) and by positioning the Swan Ganz catheter, cardiac output (CO). If possible, volumetric monitoring (COLD/PICCO) should be carried out, as it allows to measure reliably the portion of extravascular pulmonary water.
- monitoring of respiratory functions that, by repeated blood gas analyses and assessments of the acid-base equilibrium, allows to observe and eventually correct ventilation and oxygenation.
- diuresis monitoring is also necessary to treat possible changes in the water balance (oliguresis, diabetes insipidus, anuresis).

- body temperature monitoring is generally performed by thermometric tubes located in the pharynx or in the rectum, or through a catheter in the pulmonary artery in order to record the central body temperature.
- metabolic monitoring by repeated blood chemical analyses (clotting test, haemochromocytometric analysis, electrolytes, blood glucose concentration, etc.)

Homeostasis can change in a person in a brain-dead patient (arterial hypotension, hypoxemia, cardiac arrhythmias, endocrine-metabolic mutations, etc) and it should absolutely be kept under control in order to guarantee the proper working of organs to be removed (6). Episodes of hemodymic instability (hypotension), whose seriousness depends both upon the mechanism of brain death and upon the adopted therapeutical treatments, are rather frequent.
Arterial hypotension is often due to a loss of vasomotor tone and to hypovolemia, that comes up because brain-dead patients are often treated with diuretics or ansa, as antiedemigenic therapy, in order to counter the brain edema in the first phase, and therefore volemic renewal is necessary by infusion of extracted erythrocytes, plasm, human albumine, crystalloids, etc.
Finally, it is a good rule to place cannulas in at least two large peripheral veins, to protect systematically eye bulbs and also to take care of the aseptic maintainance both of the tracheo-oral tube and of the urinary bladder catheter, in order to prevent possible sources of infections.

**Implementation strategies**
The above-mentioned functions, when carried out strictly, in a well-grounded way and with professional skills, ensure a good level of efficiency both in the clinical management of donor, and in the development of the whole process. It is however essential to choose the right person that is fully aware of this role and endowed with enough charisma and enthusiasm to accomplish it.
Thus, detecting qualified and motivated personnel with a sound knowledge both of units generating potential donors, and of the phases in the donation process (clinical, legal and logistic), for which organizing periodic training and education updating courses, is a pre-requisite for planning local co-ordination (7).
It is also important to acquaint all hospital health workers, with the exact location of the co-ordination group (operational group). Health workers are the first target of a good hospital coordination, together with setting up simple and effective operational protocols for the various hospital technical-professional services.
The choice and grant of a room inside the intensive care unit is a second main step in the organisational process, provided it is equipped with minimal necessary equipments such as personal computer, phone and fax; here a member of the operational group should always be found in order to manage relations with other actors in the process.

**Conclusions**

In such a work, there are not pre-packaged formulas or reference models that ensure the achievement of high efficiency and productivity levels as concerns donors, but this new character is liable to take on increasing tasks inside the Hospital, in order to increase the number of donors, if properly supported by hospital management and by regional

institutions and he/she could also contribute substantially to the improvement of present activity levels. On the other hand, a reduced or increased hospital efficiency, in terms of results, refers to the productivity of the co-ordinator and of his/her structure, that is, to the number of detected and utilised donors as to the maximum number of detectable and useable donors. This last item, that means the capability of turning a cadaver into a donor, is one of the most important clinical-organisational gauges of quality for a hospital and for its co-ordinator. Therefore, production and supply of health services in this sector need for intervention and professional and human contribution by different units. This means that, if a proper answer is to be given, an intervention has to be made in all those sectors that take part in the final product production, that is transplantation.

APPENDIX

In order to supplement previous text, please find hereafter some paragraphs from the document:
"*Guidelines addressed to Regional and Interregional Centres, in order to standardize co-ordination activities for organ and tissue procurement at the national level (artt. 8, 10, 11, 12 – Law n. 91 dated April 1 1999)"*

### 3.1 Functions of Local Co-ordinators for Transplant Activities

The Local Co-ordinator has been given the following tasks laid down by an adhoc regional act, later acknowledged by an agreed enforcing act issued by health facilities:

1. preparing the annual programme of activities to be evaluated by the General Manager of the Health Unit and by the Regional Centre Co-ordinator;
2. verifying that the death diagnosis committee has been informed by the Medical Management in the cases foreseen by related laws in force (L. 578/93 e DM 582/94), also irrespective of organ and tissue donation;
3. implementing or setting guidelines for sending typing samples from organ donors to the competent immunology lab;
4. ensuring the prompt communication of donor data to the CRT and to the health facility to which organs will be allocated;
5. ensuring directly or by proxy the co-ordination of all organs and tissues removal and transfers;
6. co-ordinating and transmitting official documents concerning removal e trasmettere gli atti amministrativi relativi agli interventi di prelievo previsti dalle norme;
7. filling, in collaboration with Medical Management, the Local Registry of Brain Damaged patients, of carried out extractions and of causes of failure to carry out extractions;
8. monitoring deaths in order to detect potential donors of corneas, cardiac valves, vascular grafts, osteo-articular segments, cutis, and co-operate with ICU workers in talks with donor's relatives;
9. working out programmes for organs and tissues procurement;

10. carrying out sensitization and consulting campaigns for health workers as far as donation and transplant are concerned;
11. keeping relations with donor's family, both during the donation process and in the following steps;
12. keeping steady relations with General Practitioners, in order to sensitize and give proper information about therapeutical possibilities of transplantation and the social value of donation;
13. developing adequate relations with local mass media about donation and transplants, under the directions of the General Management and the Regional Transplant Centre;
14. submitting a well-grounded report on the carried-out activity, each year, to the Medical Management of the Health Facility and to the Co-ordinator of the Regional Transplant Centre;
15. highlighting, inside the programme, the paths to improve hospital organisation for removal and transplant activities; launching information campaigns, health educational training and activities for cultural growth in the local community as regards transplantation, taking in special account targets such as school and religious groups, together with voluntary associations, according to CRT orientations.

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