



ORGANIZATION IN OPHTHALMIC HEALTH CARE: EXAMPLE OF AN ITALIAN EXPERIENCE

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ABSTRACT

Lack of organization in ophthalmic care drives to inappropriate visits, long waiting lists and waste of resources. As in all fields of medicine, the impact of aging-associated diseases has increased exponentially due to the known factors of longer life expectancy, greater demands for a good quality of life and increased availability of diagnostic and treatment options. We report our experience in applying a “hub and spoke” model in the reorganization of the ophthalmological services of Turin, the biggest city in Piedmont (North-Western Italy). This model provides a limited number of hospitals for the management of complex cases, and more peripheral centres which provide assistance for cases with less complexity. The reorganisation of ophthalmological care has proved to optimise human and technological resources and to improve quality, delivery times and equity in accessing treatment.

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INTRODUCTION

The number of practicing ophthalmologists in Italy is currently estimated at about 6500. Thus, there are around 12 ophthalmologists per 100 000 inhabitants, similar to Austria (12 per 100 000), but higher than other European countries such as Nederland and United Kingdom (4 per 100 000), France (9 per 100 000) or Germany (8 per 100 000) (OECD/EU, 2016).

The mean waiting time for a first appointment at an ophthalmic outpatient clinic is about 9 months, in general higher as compared to other European countries. This delay contributes to the development of inappropriate referrals to urgent services (Blundell, 2010). As well as for clinical practice, long waiting lists are not unusual for ophthalmic surgery. Differences are present in the mean waiting time for cataract surgery between European countries, even though the number of surgeries carried out per 10000 inhabitants is similar (Mojon-Azzi, 2007 a). In Italy the average waiting time for cataract surgery is 250 days while it is about 40 days in the Netherlands, 60 days in United Kingdom and 100 days in Portugal, Spain and Finland (Mojon-Azzi, 2007 a). It is generally accepted that the delivery of ophthalmic care is limited by lack of resources. However, the above data highlight how resources could be used more effectively for the treatment and prevention of eye disease if a greater organization of existing services is applied (Blach, 2001).

As in all fields of medicine, the impact of aging-associated diseases has increased exponentially due to the known factors of longer life expectancy, greater demands for a good quality of life and increased availability of diagnostic and treatment options (Mets 2012).

Together with the growing requests, the addition of the inspiring principles of the national health service has raised a series of issues in ophthalmological assistance.

The following principles have been postulated to provide a guide in the healthy system management (Nutti 2012):

- Quality of the services delivered to citizens, in order to ensure that patients receive safe, prompt, and correctly delivered services.
- Equity, which deals with potential performance differences across and within regions and across providers.
- Appropriateness: Each patient should receive nothing more, but also nothing less, than what is required.
- Efficiency, which means achieving desired results with the most cost-effective use of resources.

The critical issues of ophthalmic organization have been highlighted by the 2011 Italian Health Ministry report (Ministero della salute 2011). Specifically, the main issues were a strong territorial inhomogeneity in the distribution of outpatient services, a fragmentation of the supply points and a non-optimal response to some diseases of considerable importance and complexity. In the same report the authors proposed reorganization of the system according to the principle of integrated networks, called “hub and spoke

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model". This model proposes the management of complex cases, or those requiring advanced technologies in a limited number of hospitals (Hubs). The activity of these centres is strongly integrated with that of the peripheral centres (Spoke), which provide assistance for cases with less complexity. These multiple centres would work as satellites and should guarantee homogeneity in the technical and professional models applied, the use of multidisciplinary teams and well-defined treatment programmes.

More specifically the integrated network includes

- Outpatient clinic: all patients, with the exclusion of those who needed emergency services, have to pass through a complete ophthalmological visit in these structures. Only patients who need instrumental examination or more complex cases are addressed to structure of higher level
- First and second level hospitals in which only complex cases would be referred to receive appropriate management
- Centres of excellence or third level hospitals, characterized by high-level technological resources as well as fundamental and clinical research

The possibility to concentrate expensive technological equipment in a limited number of centres allows higher standards of efficiency and quality.

Thus, this model of organization provides for a clear division of tasks together with a strict interconnection between the various levels, as represented in figure 1.

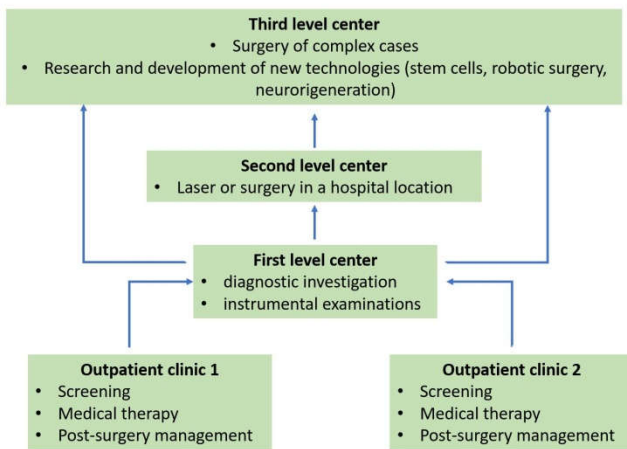


Figure 1 Model of reorganization of the ophthalmological services

We are currently managing to adopt this model in the reorganization of the ophthalmological services of Turin, the biggest city in Piedmont (North-Western Italy), that represents the reference for about one-third of the 4.5 million people living in Piedmont.

An example of the application of the organization network could be the diagnostic-therapeutic pathway of glaucomatous pathology. All glaucomatous patients are visited and followed in one of the outpatient clinics which are equally distributed throughout a defined area. Access to first level centres is limited to patients who need instrumental examinations, while laser or surgical therapy is dispensed from second or third level centres. The patient's postoperative management is carried out on the territorial outpatient clinic.

Diabetic retinopathy, as well as glaucoma, could potentially obtain benefit from this management. Thanking to the recent introduction of Telemedicine, with examples from north-east Italy and other countries (Vujosevic 2009), it would be possible to customize patients' necessities and treatments after a first "screening" appointment (Vujosevic 2017). Patients would so be redirected to territorial practice or secondary-tertiary level services basing on fundus photographs as well as clinical data (Vujosevic 2016).

Finally, the introduction of an electronic medical records would represent one of the most important steps in the management of patients, being able to provide essential clinical and surgical information to all doctors visiting a patient independently of the location (Chan, 2013; Sanders 2013; Khan 2015).

As mentioned, third center levels should also include fundamental and clinical research facilities, to proceed together with the fast progress and innovation of technologies, in the development of customized therapies.

In conclusion the reorganisation of ophthalmological care is aimed to optimise human and technological resources and to improve quality, delivery times and equity in accessing treatment. Our experience has proved the efficiency of an integrated system adopting the hub and spoke approach.

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