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La Qualità e le Qualità in Medicina Generale

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EDITORIAL

Mario Baruchello
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Several important scientific and professional events saw as major protagonists some of our colleagues from the QQ newsletter in the past few months.
After 17 years, the 56th meeting from EGPRN, the European General Practice Network, was held in Italy, in Verona, coordinated by Franco del Zotti. More than 150 GPs talked about Cancer and Family Practice during 2 intense days of debates concerning the original researches and papers presented to the well-known European Researches in GP.
We had the chance to visit a solo and group practice and taste the delicious Italian food and wine that left astonished the foreign guests.
The WONCA 2006 Scientific Committee, where Mario Baruchello and Franco Del Zotti take an important part, presented officially the New Definition of WONCA General Practice for the first time in Italy in a meeting attended by over 450 people in Treviso on October 24th (www.medicidimedicinagenerale.org, www.sivrq.com).
In this issue you can find several interesting ideas for a meditation on daily practice. For instance, the research done by Andreoli e C. suggests to pay attention to patients with hypertension and kidney problems. We also published the first results from a NETAUDIT research on our postmenopausal women after the publication on WHI on postmenopausal hormone therapy, where you might find a correct application on drug guidelines.
Professional quality should be searched both in patient relationship and with the specialist, because women in Italy choose to confront themselves with the gynecologist in dealing with this disease.
In fact the variability expressed by the group of Italian GPs is confirmed by a New Zealand survey (***BMJ* 2003;327:845-846. 11 October 2003** © *2003 BMJ Publishing Group Ltd. ICPC-2 Category X. female Genital System, Breast Changes in use of hormone replacement therapy after the report from the Women's Health Initiative: cross sectional survey of users, Beverley Lawton, Sally Rose, Deborah McLeod and Anthony Dowell*).
Mola and others present a well-taken and important exploration in quality assessment, proposing a theoretical model of confront between the Expert Project on Visitatie, Accreditation, EFQM and ISO assessment in European Union Countries.
In Italy the quality certification has become a very remunerative business for non medical organizations.
Last but not least, Frapporti and others took into consideration the CAGE test to screening Alcoholism in Primary Care. In Veneto over 40000 interviews were taken from the GPs and showed that you can easily select alcohol risk population clusters, without forgetting the relationship between patient and doctor and the continuity of care.

Mini-audit: Hypertension and creatinine in Modena Province

Andreoli Mimmo [(1)], **Bonesi Maria Grazia** [(1)], **Capelli Oreste** [(1)], **Mazzi Wainer** [(1)], **Padula Maria Stella** [(1)], **Rinaldi Vanna** [(1)], **Salinaro Francesco** [(1)], **Scarpa Marina** [(1)], **Stancari Mario** [(1)], **Tondi Lidia** [(1)], **Del Zotti Francesco** [(2)]
[(1)] GP Modena
[(2)] GP Verona

At the end of an eight hour workshop on the integration between the Netaudit system (www.netaudit.org) and Statistics of the software Millewin (for Medical

records) , the teacher (Del Zotti) has started an exercise-survey on real data about a concrete problem : "what is the frequency of hypertensive patients creatinine equal or superior to the limit threshold value indicated by some international guidelines on Blood Hypertension (1.20)?". The answer to such a question is not only a "neutral statistical datum" since Guidelines provide more aggressive pharmaceutical therapies for riskier patients.

Method

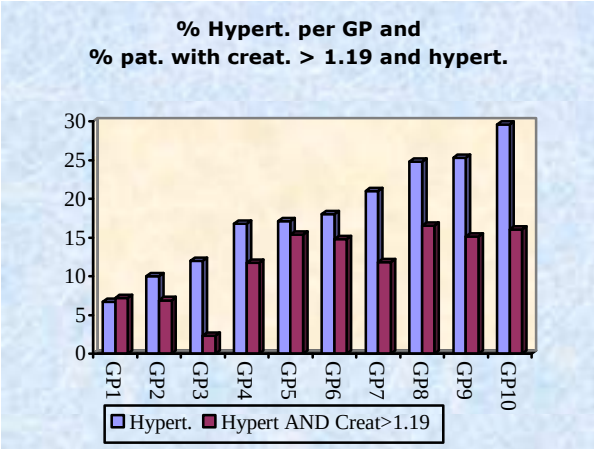
The teacher has sent his colleagues the procedure of simple statistics and SQL (step by step), to import into their software, to extract: a) the list of hypertensives; b) the list of hypertensives with creatinina >1.19

Results and conclusions

Over 12792 of 10 General Practitioners (Gps) 2221 resulted hypertensives,equal to 17.4% - Table 1 and graph 1 highlight that the patient's problem with creatinine value ³ 1.2 is not meaningless and it is superior to 2.2% of all the patients and 12.7% of hypertensives. A remarkable variability of statistical data emerges: the percentage of hypertension prevalence varies even up to a 5 factor among different Gps, which only partly is explained with objective causes but seems to be correlated to different Gp's diagnostic styles. However the percentage of hypertensives with elevated creatinine results less affected by such a difference among Gps. Therefore a question raises: hypertensives' follow-up behaviour is more uniform at least among the Gps of this group, than the I diagnosis?

GP	Patients	Hypert.	Hypert. (%)	Creat > 1.19	Hypert. and Creat. > 1.19 (%)
1	**1512**	**259**	**17.1**	**40**	**15.4**
2	**110**	**326**	**29.6**	**52**	**16.0**
3	**1024**	**259**	**25.3**	**39**	**15.1**
4	**1521**	**256**	**16.8**	**30**	**11.7**
5	**1290**	**271**	**21.0**	**32**	**11.8**
6	**1444**	**144**	**10.0**	**10**	**6.9**
7	**1450**	**97**	**6.7**	**7**	**7.2**
8	**901**	**162**	**18.0**	**24**	**14.8**
9	**1450**	**174**	**12.0**	**4**	**2.3**
10	**1100**	**273**	**24.8**	**45**	**16.5**
Tot	**12792**	**2221**	**17.4**	**283**	**12.7**

Prospects: This initial study encourages us to develop a second audit , so that we will focus our attention not only on the laboratory measures of the renal damage but also on the detailed analysis of the therapies employed and their homogeneity with the most valued guidelines.



Decrease of women submitted to HRT: analysis of 2 periods of 7 months in a group of 43 GPs members of "Netaudit" list

Dolci A., Granzotto S., Piccoliori G., Vantaggi G. and members of Netaudit List.

INTRODUCTION

The important trial WHI induced the interest of women and practitioners upon the opportunity of beginning HRT (hormone replacing therapy) in the woman in menopause.
We believe that the clinical results of WHI study are for General Practitioners an important occasion of reflecting either on a new way of relating with the woman on the edge of climateric and on the analysis of the impact of great trials on the prescription modifications of the specialists and of the same GP

AIMS AND METHODS

To estimate the impact of the important epidemiologic study WHI about the Hormone replacing therapy (HRT) on the decrease of HRT among our women ranging from 50-70 years old, in two periods of 7 months each: the 1st period prior the WHI study and the 2nd following the WHI. Therefore: a) 1st period: from januarry 2002 to july 2002 (issuing month of the trial double blind WHI); b) 2nd period: from August 2002 February 2003.The only requirement was to follow-up in a retrospective way the possible spontaneous reduction in the two periods.

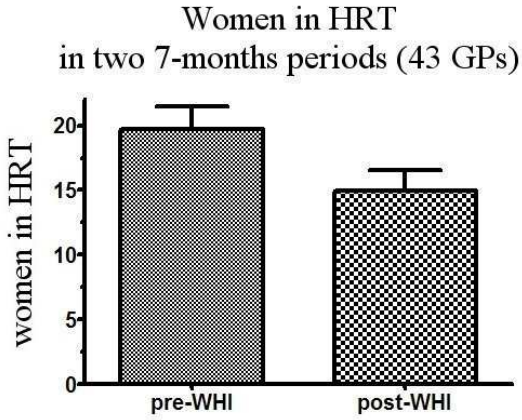
SCHEDULING WAY

We scheduled those women in menopause from 50 to 70 years old, who assume regularly pathces or pills having estrogens for HRT, with one prescription in 2 quarters at least.
We decided to exclude, following the will, the use of hormones throuth vaginal way, those women having severe deseases, insanity and mental disorders.

RESULTS

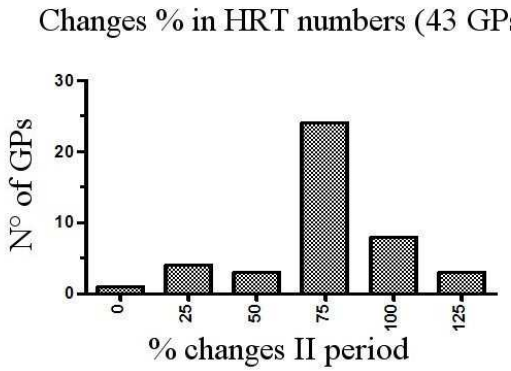
43 GP of netaudit list assist a population of 62.801 patients (media: 1460 patient x GP)
Number of women in HRT per GP: 1st period: during the 7 months prior to July 2003 each participating GP treated with HRT 19.9 women, on the average.
Number of women in HRT per GP: 2nd period: during the 7 months following July 2003 each GP treated with HRT 14.9 women, on the average.
Difference between the two periods: in the 2nd period there is a significant decrease
(figure 1); from an average of 19.7 of the 1st period to an average of 14.9 of the 2nd period ($p < 0.001$: interval of confidence of the decreasing: 3.2-6.3). This occurs in the absence of a significant decrease of women from 50-70 between the 1st period and the 2nd period (the average per GP of women ranging from 50-70 is the same and without important differences (in 1st period 221.9; in the 2nd period 222.4).

Fig 1



Difference among GP: as you may see in the figure 1, there is not such a small difference in the decrease of women in HRT in the 2nd period among GP, which is for a good part independent from the quantity of the initial number of patient in HRT. In particular, while a low number of GP increased their own prescription of HRT (see in the istogram the negative columns on the right) the most part of GP decreased their own prescriptions of 25%-50%.

Fig. 2



Conclusions

From the above data, we may assume that the literature, the news from media, the position paper of some cultural associations have influenced on the GP more of what occured for the prescription of the pills of 2nd generation (in Italy, after some years from the metanalysis published on BMJ, which supported the pills of 2nd, we are still not beyond to 80-90% of pills of 3° generation). It is difficult to understand the reason of this decrease trend for us. Maybe, this time, the committent of WHI (an important female organisation). Paid a relevant role;maybe the trial relevant size impressed too much.
It is now to be understood the reason why it occurs a fair variation of women decrease of various GP. Among then reasons, there may be a different sensibility of some GP to the news from the EBM world. This small pilot-study may only offer some initial guidlines, useful to plan larger audit and researches on the important and delicate chapter of the pharmacological and non-pharmacological of climateric management.

This study has been led by members of **Netaudit List** (www.netaudit.org).
Methodologic and Organizational Coordination: Dr. Francesco Del Zotti, Dr. Enzo Brizio
Test Coordination: Dr. Piero Quattrocchi
Participants: Angelo Augruso, Marina Balestrazzi, Mario Baruchello, Luciano Bertolusso, Dario Bonetti, Paolo Bovo, Angelo Campanini, Bernardo Cannelli, Luciano Caraceni, Claudio Carosino, Antonio De Bari, Cosimo De Mola, Alberto Dolci, Roberto Galante, Filippo Giannobile, Stefano Granzotto, Marco Grassi, Giorgio Lazzari, Francesco Magliozzo, Marcello Mangione, Anna Rosa Marchetti, Roberto Marchetti, Carlo Fedele Marulli, Antonio Maria Menardo, Tiziana Murari, Guido Novella, Paola Pasquato, Giuliano Piccoliori, Abramo Pierantoni, Piero Quattrocchi, Giuseppe Rubicini, Paolo Schianchi, Giuliana Simioni, Carlo Stramenga, Nicola Tarallo, Massimo Tombesi, Giorgio Torti, Maria Fiorenza Tota, Gianni Vantaggi, Emanuele Visentini, Eugenio Visonà

ISO 9001:2000 AND QUALITY IN FAMILY PRACTICE

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Background

Quality is a goal for healthcare services; in particular, quality of general practice/family medicine is one of the main topics currently addressed by national and international scientific societies.
Since 1910, when the American surgeon Ernest Codman introduced the notion of accreditation to ensure the quality of hospitals, the definitions offered by authoritative bodies (ExPeRT 1996, ISQua 1998, JCAHO 1999)[1] have multiplied; yet, they are remarkably different in terms of goals and management.
First of all, it is necessary to make a distinction between internal and external quality evaluation mechanisms. In Primary Care Medicine, multiple internal evaluation efforts are now underway, especially in Northern and Central European countries[2,3,4.] E*xternal evaluation, or accreditation* proper, can in turn be split into *institutional* and *voluntary*, each having its own distinct features. The *institutional accreditation* aims at selecting service providers who are forced to go through this process to access the market.
Voluntary accreditation is driven by different motives: here, the goal is to aim at excellency rather than guaranteeing a minimum standard about structural indicators (see Donebedian's definition 1980).[5] In August 1996, the European Union launched a project on external peer review techniques (ExPeRT Project)[6]. ExPeRT had three objectives: a) to exchange external accreditation experiences across the European Union; b) to establish some mechanisms to collect and publicize ideas and experiences; c) to define a common framework and standards for healthcare services. The ExPeRT study has highlighted four main models used for the external evaluation of quality, differing in terms of goals, methods and impact: Visitatie, Accreditation , EFQM and ISO.
To develop a consistent quality system, it would be advisable to adopt universal references enabling a coherent comparison of the different healthcare systems vis-a-vis family practice. Attention should be paid to the organizing and managing aspects, as well as to quality policies. Such references should include:

1) The general principles underlying the fundamental skills of family practice
2) The general method adopted to put in place a quality system

As to the general principles underlying a family practice quality system, they can be singled out from the definition offered by the WONCA European section in London in June 2002. (http://www.who.dk/document/ihb/EuropdefGP_Fmlymed.pdf)[7.] It can be taken as a fundamental reference, as a general framework of principles, to identify quality indicators allowing a comparison and adjustment of national and regional healthcare systems with respect to family practice.

Aim

Aim of this study is to check whether a general methodology such as ISO 9001 vision 2000 standards can be taken as a proper model to put in place a family medicine quality system; this should not be just a method for an external validation process but also a procedure aimed at improving the system internal quality.
The advantage stemming from the adoption of a set of general standards, common to any industry in the production of goods and services, is to make comparable not only the different organizations and systems related to family practice across the European countries but also to get a standardized, reproducible methodology for a quality family practice as well as for other sectors of the production of services.

Method

What methodology for quality?

The standards developed for the ISO 9000 version of 1994 have been largely employed in the most automated departments such as laboratories, radiology facilities, public and private hospitals. The evaluation audit did not imply a qualitative implementation. In December 2000 a new collection of standards called ISO 9001:2000 replaced the previous three editions. Its goal is to achieve the customer's satisfaction through the adoption of a quality system based on production and service generation processes.[8]
We carried out a PubMed bibliographic research about ISO 9001:2000 and family practice: unfortunately, we could not find any experiences.

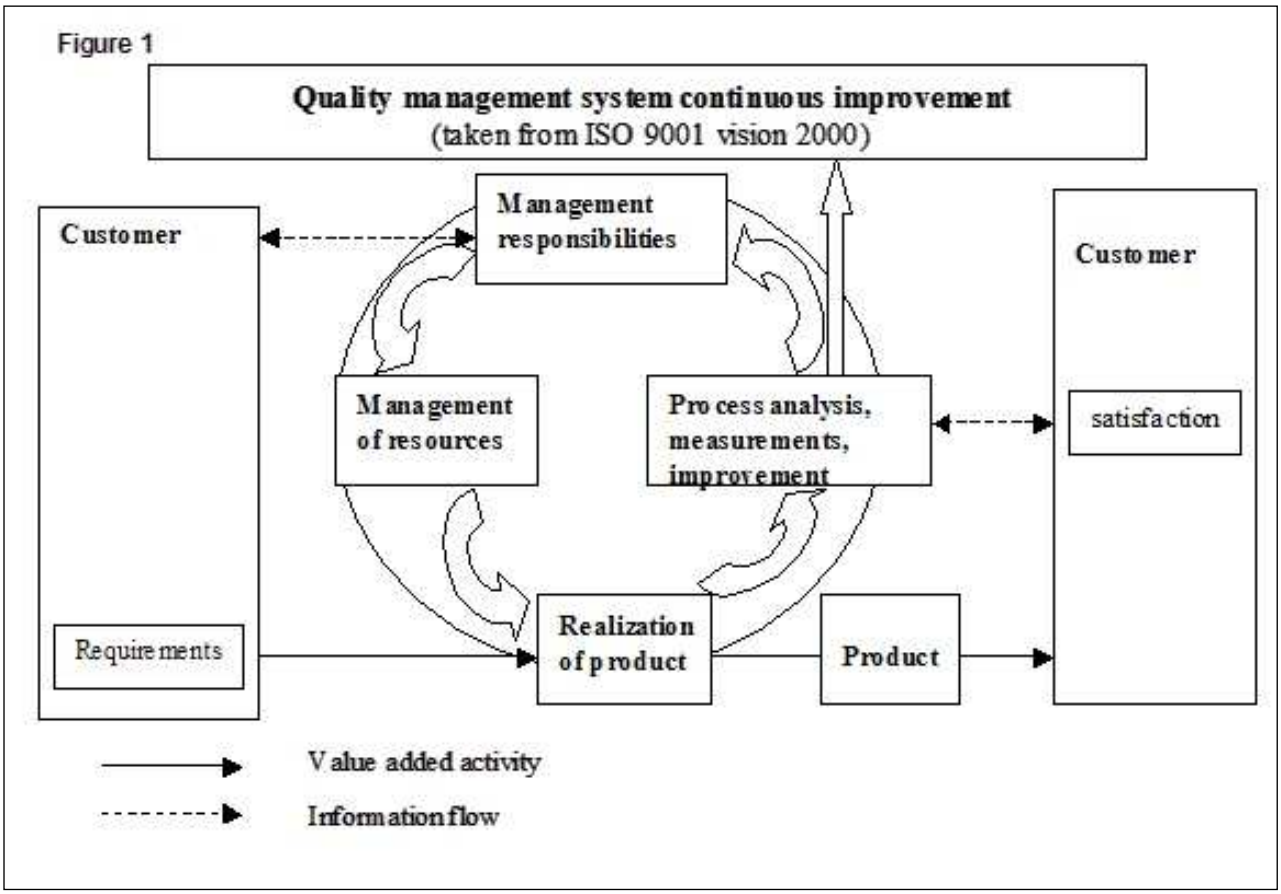
The process-based approach

The process approach is based on the notion that any organization is a system of interrelated processes. Any activity aimed at transforming an input into an output can be viewed as a process. In turn, each output can be an input to some subsequent process. This procedure enables to break down and systematically understand the different stages of production.

ISO 9001:2000 is designed to run and improve processes. These notions are summarized in the diagram of **figure 1**.

Results

ISO 9001:2000 in Family practice



The diagram represents a process-based approach and highlights the existing relationships. It is appropriate to stress that the customer is both the initial and final point, i.e. the key element of any process. In fact, it all begins with the customer's requirements, not simply in terms of explicit demand but also of implicit characteristics (the system inputs); at the end, the customer represents the final destination of each output: any improvement policy measures and analyses the customer satisfaction.

In this context, the management plays a central role. It is responsible for the evaluation of customer requirements, the proper use of resources to realize the product or service as well as the customer satisfaction measurements and analyses. In fact, the management has the duty of establishing a quality policy most in line with the organizational goals, drafting an in-house manual of procedures and standardizing the collection and analysis of measurements,

The investment allocated by the management to enhance the training, skills and awareness of the staff (human resource management) is therefore fundamental.

While in hospitals and health facilities it may be relatively easy to identify the various actors of the healthcare process (particularly the management responsibilities), things become more complex in primary care medicine.

First of all, it is necessary to identify the "customer", to then analyse his "requirements" and measure his "satisfaction". The notion of 'customer' lends itself to multiple meanings: the individual patient of an individual doctor, the whole of patients of an individual doctor or practice, the whole of patients in a given geographic area, or the whole of the healthcare system patients. As to family medicine, it is important to protect the individuality of the customer/patient with his own unique problems and needs, i.e. requirements.

As to the satisfaction, whilst it is easy to check it relative to the structural indicators, the task gets more complex when outcome and process indicators come into play. In fact, in addition to the quality of life evaluation scales, a role is played by unique clinical criteria observed by the family doctor (FD) that can be poorly perceived by the patient or that can hardly be standardized..

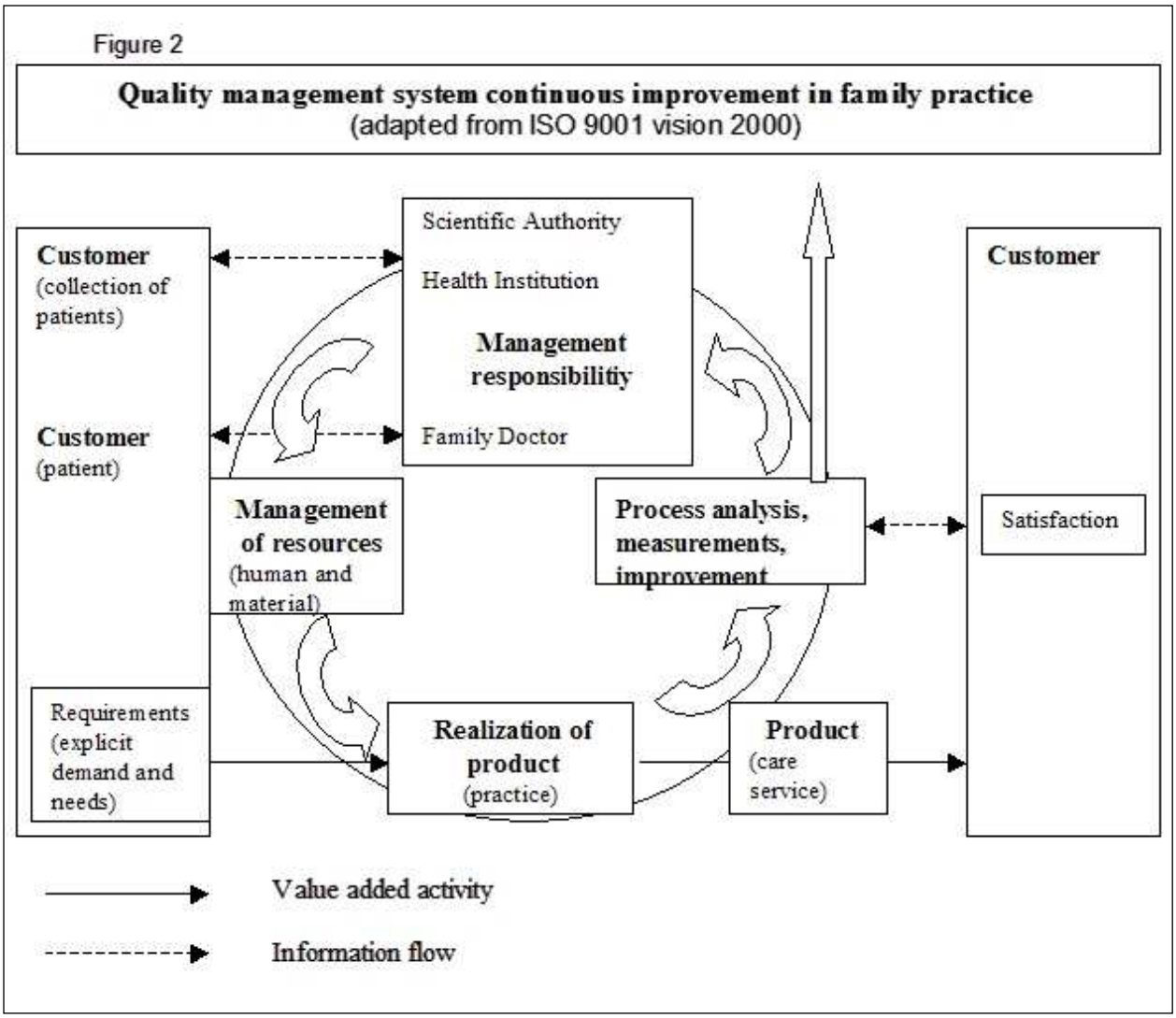
Another crucial point is the allocation of management responsibilities.

In institutional accreditation, external validation procedures mostly concern structure indicators; the Healthcare Institution (HI) can only be attributed the general responsibility for such indicators rather than for the definition of healthcare processes or the identification of outcome indicators. For these latter, it is essential an intervention from the Scientific Authority (SA). At any rate, in those instances the management considers the "customer" as a collection of patients. When the term "customer" refers to an individual patient, the management responsibility falls upon the Family Doctor (FD). The FD analyses requirements and is responsible for the delivery of care to the individual, for the organization and implementation of the care process and its improvement within his practice. By adjusting the ISO introductory pattern to family practice, the management box should include the FD as the person responsible for both the individual customer (patient) and the whole of his own patients. In this context, the SA shall be responsible for the provision of analytical methods and tools, while the HI, i.e. the organizer and manager of the healthcare system, shall be accountable to the other groups of patients.

The SA includes the whole theoretical work on primary care medicine, in terms of training, education and relationships. The SA acts as a counterpart of the Healthcare Institution in the area of organizational, training projects and quality systems for Family Medicine. The HI manages healthcare services locally and is accountable to citizens on a regional and national level; moreover, it performs planning and law making duties.

The diagram shown in **figure 2** can be adopted in family medicine.

Figure 2

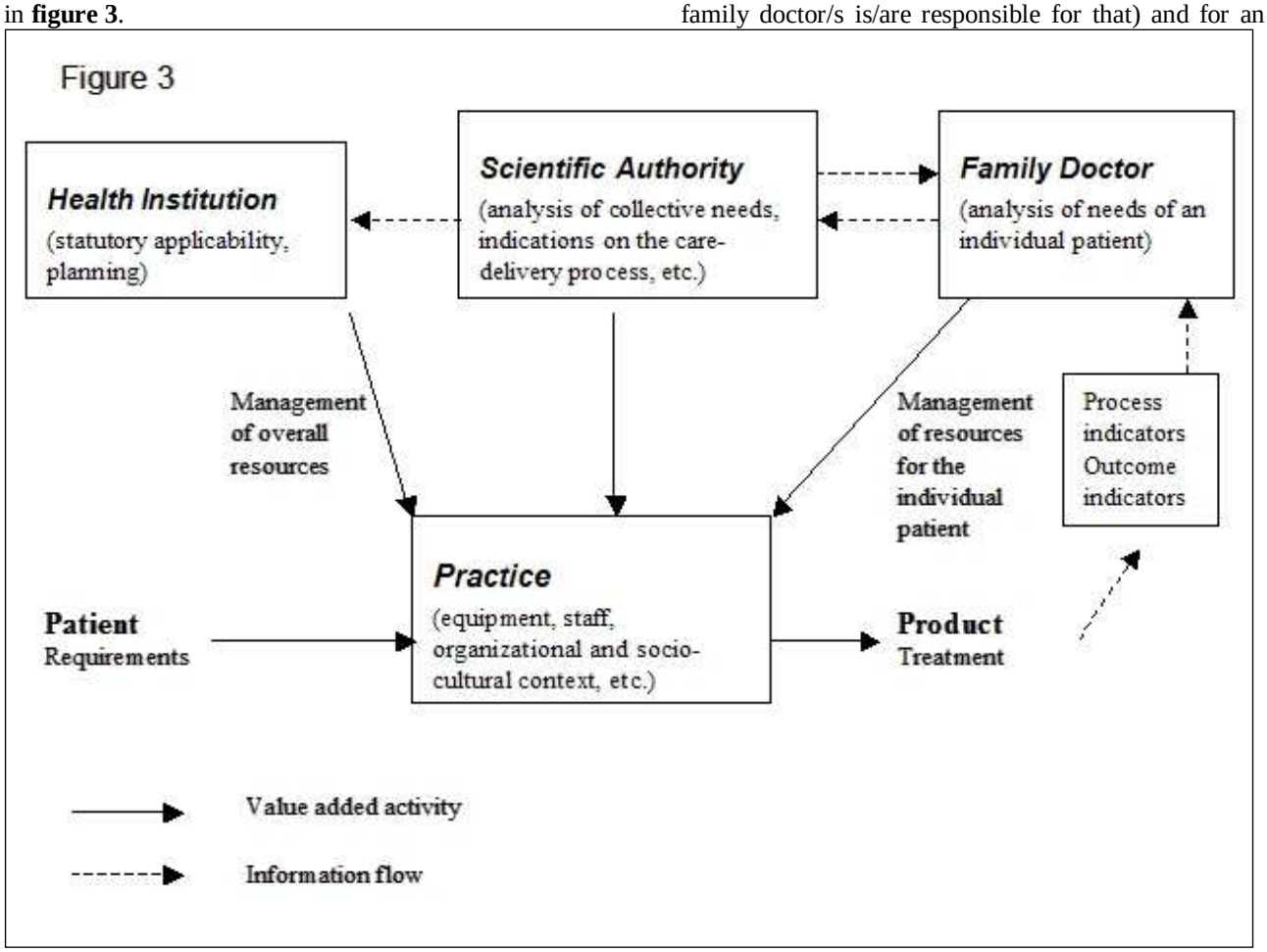


The product is shaped by the practice, i.e. the actual venue where the healthcare system becomes tangible, with the aid of the available resources. While a practice can include just one family doctor with no other professional help, it does not refer to the FD as such. The care service is the result of a complexity of structural and relational factors: office location, office structure and organization, service, social and cultural context. These specific elements cannot be standardized since endless variables should be taken into account.

The analysis of processes, measurements and improvement actions should be performed by the management subjects: the overall or local system (SA and HI) and the individual practice (Family Doctors).

As to the management of resources, HI and SA are responsible for those resources that have an impact on the populations of patients; on the other hand, the FD is responsible for those belonging to an individual practice and for the relationship with an individual patient.
Consequently, also training should unfold on three different levels, depending on the management and its quality policy.

Examples
We will try to graphically describe one major process of primary care medicine, like home care or a common disease treatment (e.g. arterial hypertension).
The general schematic of both processes is represented in **figure 3**.



Statutory applicability means the whole of laws and regulations on the production of good or service in question.
When referred to home care, the patient's requirements include his explicit request and his implied need; the HI management responsibility could be the enforcement of the national agreement rules (negotiated with physicians' labour unions, thereby falling within the HI duties) or the goals of the company, regional or national healthcare plans. The HI manages resources and is accountable to the whole of "customers".

The SA shall analyse and explore the overall issue of home care, providing indications on the type and method of care delivery.
The FD analyses each individual request and responds to it in quite independence, based on the HI planning goals and laws as well as upon the indications offered by the SA.
The practice delivers treatment (e.g. the doctor's or nurse's home visit, or the office appointment, or the planning and organization of periodical and/or more intensive home care, etc) .
After entering all such data, the whole of services is evaluated according to the outcome and process indicators established by the SA. Entries may be useful for both the practice in-house audit (the relevant family doctor/s is/are responsible for that) and for an overall evaluation of the system. To realize an overall improvement of the care process it is necessary to perform a number of measurements, with a review of the entire process, a correction of the existing indications and the identification of any corrective actions.
The same pattern can be followed for a care process concerning a disease treatment.

Discussion
To apply ISO methodology to family practice, it is paramount to allocate the management responsibilities vis-a-vis the customer with an eye to the whole quality system, from analysis to verification and improvement.

The customer satisfaction analysis looks quite complicated.
According to our proposal, the management responsibility should be allocated to the Scientific Authority (with reference to the theoretical framework) and to the Health Institution (the practical management of resources, legislation and planning) whenever the customer is a population of patients; on the other hand, such responsibility should fall upon the Family Doctor's having a relationship with the individual customer. This approach aims at facilitating a synergy among three independent tiers in the best interest of customers as well as to satisfy their needs. Clearly, the risk of some overlapping of duties is high; on the other hand, this is what already happens in many healthcare systems on a daily basis (including in Italy). A well-rooted, highly autonomous scientific authority may reduce the risk of responsibility overlapping.

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Picture from GP life

(Picture from Dr. Sandro Girotto's surgery, shown to EGPRN Collegues during "Practice Visit" in Verona Congress: 2003/10/16-18)

An useful solution for privacy observance and for acoustic isolation of surgery: the double door

****

The CAGE Test in General Practice: Results of large-scale alcohol screening in the Veneto Region: method, values and limits

Frapporti G*, **D'Alessandro G***, **Guerra C***, **Marchetti AR***, **Scassola M***, **Zavan V****.
**MMG, **SERT Dolo (VE).*

Introduction

Due to its quickness and simplicity CAGE is certainly the world's most widely used alcohol-problems screening questionnaire (see insert). It was first put forward by JA Ewing and BA Rouse in 1970 at a conference on alcoholism in Sydney. Its validity was confirmed in the world of psychiatry in 1974 (1) and since then has been used all over the world, in different

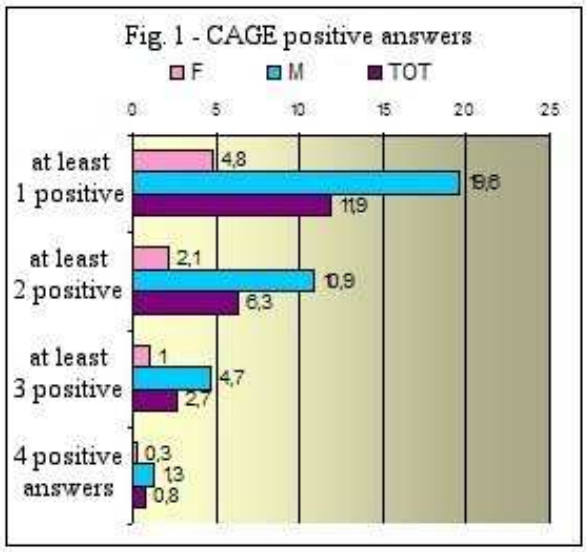
settings, among populations differing by sex, age, culture, states of health and with varying test sensitivity and specificity. A positive response to two of the

CAGE is an acronym taken from four questions:
- *felt need to **C**ut down drinking?*
- *ever felt **A**nnoyed by criticism of drinking?*
- *had **G**uilty feelings about drinking?*
- *ever take morning **E**ye opener?*

questions is considered an indicator or a high likelihood of alcoholism and a positive response to three or more items an indication of alcoholism itself (2). Since the seventies studies on alcoholism have tended to move their focus away from the psychiatric and gastroenterology fields into the most diverse areas of health care and large populations not undergoing medical treatment. Studies in primary care have highlighted the complexity and multidimensional nature of the subject and contributed in no small way to the raising of new questions and to encouraging the carrying out of new studies. The nosology of alcohol-problems has had to, and must still, take account of developments in our knowledge of neurobiology and advances in the psychological and social sciences particularly as regards addictions and lifestyles. It also has to deal with unclear and misleading terminology (where such definitions abound as adequate/moderate, inadequate/heavy, alcoholism, vice etc.). Today, in the world of general medicine, we must ask ourselves who it is we wish to identify and where we wish to go when we assess the effects alcohol use may have on a specific patient on a "continuum" from the risk of consumption to more complex biological, psychological and social problems. The general practitioner in Italy today resorts simply to his or her intuition and biomedical knowledge acquired during university studies. There are however standard interview models that can be employed in relation to how and how much alcohol is consumed (3). The numerous questionnaires used to identify and assess alcohol-related problems generally take as their reference points the DSM-IV or the ICD-10 clinical criteria when diagnosing "abuse" and "addiction". MilleWin (the most common software used in General Pratice in Italy) users have an automatic assessment system available for grams per day or week and the 10-question AUDIT questionnaire.
The aim of this work is to briefly present a recent study using the CAGE questionnaire and to discuss issues relating to the usefulness and the limitations of the use of an alcohol questionnaire in general medicine.

Materials and methods

The results obtained with the CAGE questionnaire in the "Conoscere per Cambiare" (4) study are considered here. This was the largest application of the questionnaire ever carried out in Italy. All the Veneto region's general practitioners were requested to assist in a study of the opinions and lifestyles of their patients in relation to alcohol and smoking and offered a questionnaire on their own work problems and their opinions on the subjects in hand. The 2,269 general practitioners who took part (63.6% of the total) randomly selected 62,258 of their patients and asked them to fill in a questionnaire of 12 items, with 3 questions on smoking and 9 on drinking. The 4 CAGE test questions were inserted into 16 general questions on physical activity, weight, and smoking.
The Italian version of the CAGE test used is that shown in the insert above.

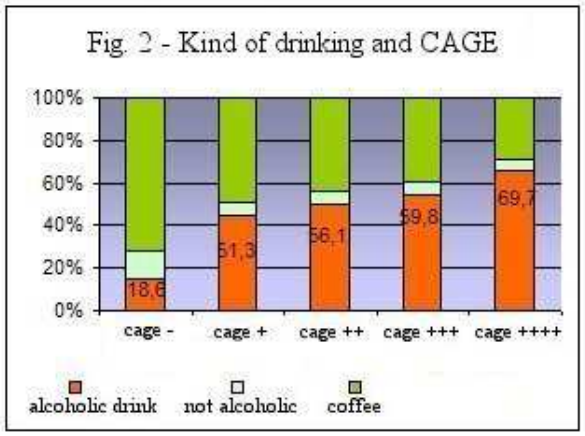


For the discussion of CAGE itself the literature was taken from Medline, using keywords "*CAGE and Alcoholism*"

Results

The CAGE questionnaire was correctly filled in by 40,698 persons, i.e. 69.3% of the total number of interviewees. 88.1% of individuals had a negative CAGE and, according to the questionnaire's predictions, should have no problems regarding their alcohol consumption. 11.9% gave at least one positive response. This broke down into one positive CAGE for 19.6% of males and one for 4.8% of the females. According to the test's premises, this group of persons would be exposed to alcohol-related risks spanning a very wide range from relatively low risk to risk of serious biological, psychological or social problems. Two positive answers were provided by 6.3% of those interviewed, with a male-female ratio of 4.7:1, while 2.7% had at least three positive responses.
A breakdown of CAGE positive individuals for the 21 health districts in the Veneto shows a variability of at least one positive response ranging from 15.3% to 9.1% and at least two positive responses ranging from 8.7% to 4.6%. These variations did not seem to correlate with town or country districts or with the percentage of correctly filled in questionnaires (which ranged from 50.6% to 99.9%).

Those with a positive CAGE tended to offer guests and friends alcoholic drinks significantly more frequently than those with a negative CAGE (figure2).



18.6% of negative CAGE interviewees said they offered an alcoholic beverage (mainly wine) to guests, as compared with 56.2% of those with a CAGE with two positive answers and 69.7% of those with positive 4 items.
In a different section of the questionnaire 7.8% of interviewees said that there was at least one person in their family "*who drinks too much"*. This indicates the perception that within the family there is someone who drinks dangerously or who has some alcohol-related problem. People who said that there was a family relative with alcohol problems tended to more frequently have a CAGE with at least two positive responses (16.5% vs 6.8%; RR: 2.99; IC: 2.76-3.25).

A significant percentage of people interviewed, 30.7%, failed to correctly fill in the CAGE form. This factor needs to be assessed when deciding on how CAGE can be used as a routine screening instrument in general medicine, in this particular cultural context.
Table 1 illustrates certain variables considered in relation to how correctly, or otherwise, the CAGE questionnaire was filled in. The correctness rate fell with rising age, falling from 85.8% among the youngest to 71,9% among the oldest patients. Those who declared that they did not consume alcohol tended not to respond to the CAGE, or did not fill it in correctly, more often than other groups (34.6% as against 25.7%), perhaps because they thought the questionnaire did not apply to them. Those who "always" consumed aperitifs and spirits tended not to respond correctly to the CAGE more often than those without this habit (22.7% as against 15.4%).
There were no significant differences in correct filling in of the CAGE test as between male and female interviewees, between those who considered and those who did not consider that alcohol use may lead to addiction, or between those who felt that drinking improves concentration and those who did not think this was the case.

Discussion

Screening. Among the many studies published on the CAGE questionnaire, the authors had not found any on a larger scale than this pool of primary care patients. The data obtained should be approached with caution both due to the limits in the predictive value of the CAGE questionnaire and due to characteristics of the study itself. 11.9% of general practitioners' patients in the Veneto region of northern Italy may have been consuming dangerous amounts of alcohol and 6.3% could already have established drinking problems or be addicted to alcohol. It is quite probable that most of these patients are not known to their general practitioners and are therefore not receiving adequate assistance. It is well known on the other hand that estimates of the prevalence of alcohol problems obtained from screening by short questionnaires provide higher figures than those indicated by the subjective perceptions of medical practitioners or by the patient's clinical records.
Variations between different health districts probably reflects differences between the general practitioners themselves and may depend on numerous factors such as sampling differences by sex and age, habits, doctor-related factors, the way the questionnaires were distributed and numerous other factors outside the study's control. These variations were however less than those reported in investigations into apparently more easily measured health problems such as high blood pressure, high cholesterol levels and diabetes.
Prevalence estimates obtained were comparable with other studies of populations and in particular with the GESIA studies (5) on mean alcohol consumption and social costs, sample studies by the national statistics office ISTAT (6), a study of 6 Veneto health districts using the CAGE questionnaire in 1989 (7), which produced 4.9% with two positive items, and finally with a DOXA investigation that distributed the CAGE questionnaire to 3,000 people who had recorded a positive response of 1 to 12% in 1997.

Sensitivity and specificity. The CAGE questionnaire is a very simple instrument that easily used in screening and, despite its limits, has provided useful indicators. Nevertheless, both in screening and in assessments of individual patients, it must be asked what exactly is being investigated and what is obtained. In particular, what does the CAGE questionnaire indicate at the various cut-off points with respect to other definitions

Tab 1: CAGE not valid according to some variables			
		CAGE not valid	OR (IC)
Sex	F	9.810 (31,5%)	1
	M	8.191 (29,7%)	1,0 (0,9-1,05)
Age	<=24	503 (14,2%)	1
	>64	3.705 (28,1%)	1,32 (1,24-1,40)
Use	YES	8.802 (25,7%)	1,43 (1,36-1,50)
	NOT	7.085 (34,6%)	1
Can give addiction	YES	7.363 (28,1%)	1,22 (1,16-1,28)
	NOT	6.926 (31,1%)	1
Improves attention	YES	3.210 (30,1%)	0,95 (0,90-1,01)
	NOT	9.492 (29,2%)	1

such as *"at risk"* drinking behaviour, *"dangerous"* use, *"alcohol-correlated problems"*, *"abuse"* and *"addiction"*? What is its sensitivity and specificity in the various contexts in which it is applied? What is its performance in the medical field with respect to the general population, and within different groups of patients such as women or the elderly? (see box).

Behavioural assessment. The literature recognises that the CAGE questionnaire is able to identify persons with problem behaviour in relation to alcohol, particularly with reference to the DSM-IV "abuse" or "addiction" diagnostic categories, more than in relation to heavy drinkers or those with medical problems. Local cultures and traditions may have a certain weight in regard to the above. Furthermore, in this study a strict correlation was observed between positive CAGE results, the tendency to offer alcohol drinks to guests and living in a family with other persons with alcohol problems. Lifestyle tended to emerge as a conditioning factor for the others. General practitioners should therefore also take these factors into account when counselling patients, as part of an approach that systematically involves the family.

Application method. The high proportion of interviewees (30.7%) who failed to correctly fill in the CAGE questionnaire, answering all the questions in writing, is a factor that strongly limits its sensitivity. The low compliance was, in this case, at least partly due to the complexity of the interview as a whole, i.e. to the fact that the CAGE questionnaire itself was concealed among 16 questions on lifestyle that the interviewee was called upon to fill in. Elderly individuals in particular had difficulties and it is likely that other patients coming to the doctor's office for acute illnesses, or that were simply in a hurry, also gave inaccurate answers.

Conclusions

The CAGE questionnaire provides useful information on problem behaviour and addiction. The authors found the questionnaire to be a useful screening tool but it must be kept clearly in mind that it has sensitivity and specificity limitations, especially as regards women and the elderly, for whom the cut-off of 1 is already an indicator of problems. The CAGE test is mainly of value to the assessment of behaviour and alcohol addiction but tends to underestimate actual alcohol consumption and the biological and medical problems. It is preferable to use the CAGE questionnaire on its own as, due to its great simplicity, it can be memorised. In daily practice the CAGE questionnaire, like AUDIT, meets the general practitioner's need for standard evaluation tools that permit homogenous and comparable collection of health data on their patients for the purposes of research. In the field of general medicine there is however a particular need also for an overall assessment of the individual patient. This involves a clear and accurate investigation into the quantities of alcohol actually used, an evaluation of risk levels and any correlated biological, psychological and social problems that may be present. The CAGE questionnaire should be used flexibly as part of a direct, empathetic relationship with the patient that involves an exploration of his or her personal and family lifestyle pursuant to a proper assessment of the individual's behaviour and the question of addiction. The general practitioner also needs to address the prejudicial factor that patients will lie, and sometimes defend themselves if they feel that they are being attacked. The general practitioner should not seek to conceal or mask the questions but should put them directly and clearly.

The CAGE questionnaire's sensitivity and specificity

A Medline search with PubMed, using keywords "CAGE and Alcoholism", revealed 295 articles (only two Italian) of which the authors selected 91 relating to the assessment of sensitivity and specificity and general medicine. It is very difficult to compare studies conducted in different environments and in different ways. Moreover, despite the large number of articles, only two meta-analyses were found on CAGE, both of which were carried out in US.

One of these latter (8) assessed 38 studies carried out in primary care in which standard evaluation criteria were compared (quantity/frequency figures, ICD-10. DSM-IV) with screening questionnaires on the problems of alcohol use. 11 studies made reference to "at-risk use", "dangerous use" or "harmful use" and 27 were screening programmes conducted to identify "abuse" and "addiction". The AUDIT questionnaire was the most effective in identifying individuals at risk on the basis of consumption (with sensitivity of 51%-97%; specificity of 78%-96%), while the CAGE questionnaire was found to be the best at identifying

"abuse" and "addiction" as defined by DSM-IV (sensitivity 43%-94%; specificity 70-97%).
The aim of a second meta-analysis (9) was to evaluate the performances of 8 short screening questionnaires on alcohol, each with less than 10 questions. In this case a group of independent researches selected 9 from 432 articles, according to strict criteria, and concluded that CAGE, AUDIT and TWEAK produced the best performances: the CAGE cut-off = o > 2 with regard to "abuse" or "addiction" with a sensitivity for women of from 38% to 82% and a specificity of 92% to 96%, sensitivity for men from 47% to 84% and specificity from 82% to 93%. CAGE did not succeed in distinguishing patients in relation to consumption as between "moderate" and "heavy" drinkers (M with more than 3 drinks per day, F over 2 drinks per day) especially with respect to women and lost sensitivity when applied to the general population as against medical environments.
It is found, with regard to the elderly, that problems related to alcohol use may occur at different levels of consumption in young persons and cannot be easily seen or detected due to the presence of co-morbidity or the use of drugs.
An Italian study (10) of an elderly cohort of persons over 65 years, using two assessment instruments on quantity and frequency and CAGE, showed that 19.1% could be defined as "at risk" drinkers exceeding 40 g per day for males or 20 g per day for females. CAGE identified less than half of these with a score of 1 or >1. The authors conclude that the results on quantities and the questionnaire on behaviour identify two different populations

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