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The relationships among performance measurement systems and context in healthcare sector

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CHAPTER 1 - Introduction.

1. Background and research questions

Over the last twenty years many performance measurement systems (PMS) have been developed (Kaplan R.S., Norton D.P, 1993,2000; Lewis J. 1999). Although designed for profit-making companies, some PMS can also be effectively applied to public bodies providing utilities, as shown by Kaplan and Norton in 2000 and 2001 (Kaplan R.S., Norton D.P 2000,2001).

Beginning in the late 1980s in Sweden and then in the other European countries, a broad range of New Public Management approaches has been adapted to health sector (Saltman and Busse, 2002). The most popular efforts have been carried out in order to re-configure publicly operated hospitals and change them into a growing variety of independently managed semi-autonomous organizations. New Public Management (NPM) started to incorporate a variety of instruments including intra-public sector competition, separate purchase from provision, and measure performance (Hood, 1991; Saltman and Bankauskaite 2006). Due to a large number of factors among which rising costs, technological advancements, aging population, health market failure and medical errors, in 90s many industrialized countries re-examined their PMS introducing multidimensional performance measures (Smith 2002, Arah et al 2006, Kelley and Hurst 2006).

The proliferation of health indicators and PMS has led several academics and umbrella organizations such as the World Health Organization (WHO) and the Organization for Economic Cooperation and Development (OECD) to develop conceptual frameworks and models in order to help countries in building effective tools (Arah et al 2003, Arah et al 2006, Murray and Evans 2003, Smith 2002, Veillard et al. 2005, Chang et al 2002).

As a consequence of this proliferation many papers and reports on the description of the PMS adopted by countries and their comparison have been written (Ballantine et al. 1998, McLoughlin et al. 2001, Pink et al 2001, NHS Executive 1999, CIHI 2000, Chang et al 2002) generally throughout the use of case studies or monographic issues.

There are many differences among PMSs adopted by countries. The stream of contingency theory applied to management control systems studies the factors

that influences PMSs. The main factors analyzed by contingency based researches are (Chenall 2003) the following issues:

- External environment;
- Technology;
- Size;
- Organizational structure;
- Strategy;
- Culture.

The first research question analyzed is RQ1 "What is the role of contextual factors into the design of PMS in healthcare?"

In literature some papers focused on the analysis of the contextual factor of the health reforms on managerial tools design (Griffith et al 2006, Jacobs et al 2004, Thorley Hill 2000, Preston 1992) or on performance (Saltman et al. 2007). Other authors focused on the organizational factors, in particular on professionals' behaviour as regards the use and acceptance of the managerial tools introduced (Abernethy and Stoelwinder 1991, Abernethy and Brownell 1999). This aspect is more oriented to look at the process: how are PMSs implemented? How are they used?

Hospital are used as an academic example by Mintzberg in order to describe the professional bureaucracy. In this particular context an important role is played by peer review processes. To this extent a second research question has been analyzed: RQ2 "What is the role of reputational lever in the PMS in healthcare?"

The peer review could be seen as a particular use of the benchmarking technique. Benchmarking is considered as a learning strategy, necessary for the public sector modernization (Kouzmin et al 1999). Johnston (2004) in an OECD report suggests that benchmarking is useful for improving performances, particularly those regarding efficiency and it may provide a valuable way of reconciling rising demands for health care with limits on public financing. To this extent it is interesting to look at the role that benchmarking-based PMSs can play. Thus the third research question is:

RQ3 "Which role can PMS play in the process of resources allocation in healthcare?"

2. The final outputs of the PhD research

In order to answer to the three research questions three papers are presented:

1. A contingency perspective on performance measurement system design in the Italian healthcare sector
2. Comparing quality incentives across healthcare systems in England and Tuscany: from financial incentives towards social drivers
3. Disinvestment for reallocation: a process to identify priorities in healthcare

They respectively answer to the first, the second and the third research question. For each paper the respective abstract is reported.

RQ1 "What is the role of contextual factors into the design of PMS?"

The paper "A contingency perspective on performance measurement system design in the Italian healthcare sector" aims to detect the factors that have influenced the PMSs design in a contingency based framework using the results of a research carried out in 2008-2009 on the characteristics of the PMSs adopted by Italian Regional Health Systems (IRHSs).

In literature, the papers that analyzed factors influencing the PMS design have been carried out at hospital level (Griffith et al 2006, Jacobs et al 2004, Thorley Hill 2000, Preston 1992, Abernethy and Stoelwinder 1991, Abernethy and Brownell 1999). To this extent it is interesting to analyze what happens at a macro level. The Italian healthcare reforms of 90s enforced by the recent federalist reform of 2009, have led Regions to shape their own organizational structures and relationships among health system actors (Formez 2007, Censis 2008). As a consequence of these reforms, Italy has now 21 Regional Health Systems which are significantly different from each other, both in terms of organizational structures and governance tools used. On the basis of these considerations the Italian health sector provides an interesting scenario in order to detect and analyze the factors that could have played a key role in the PMS design on a macro-level of analysis such as the Regional governments.

RQ2 "What is the role of reputational lever in PMS in healthcare?"

RQ2 was analyzed throughout the paper "comparing quality incentives across healthcare systems in England and Tuscany: from financial and bureaucratic incentives towards "social" drivers". This paper aims to perform three functions:

1. firstly it reviews the theoretical and empirical literature around governance in the English NHS as a basis of understanding the limitations of this 'standards and sanctions' dominated system.
2. secondly, it presents findings from research into the governance system applied in Tuscany, Italy as evidence of the effectiveness of using the reputation of professionals and departments as a basis of facilitating quality in the absence of sanctions.
3. thirdly, it discusses implications more widely for the English NHS and governance..

A theoretically grounded alternative to purposive-rational approaches based on a more normative oriented understanding of human action and the 'civilising processes' of moral obligation is accordingly outlined.

RQ3 "Which role can play PMS in the process of resource allocation in healthcare?"

This research question has been analyzed throughout the paper "Disinvestment for reallocation: a process to identify priorities in healthcare". It is based on an empirical study carried out in the Tuscan Health System in Italy on how to set priorities in the disinvestment process for reallocation.

The analysis was based on 2007 data benchmarking of the Tuscan Performance Evaluation System with an impact on the level of resources used. For each indicator, the first step was to estimate the gap between the performance of each Health Authority (HA) and the best performance or the regional average. The second step was to measure this gap in terms of financial value.

The results of the analysis demonstrated that, at the regional level, 2 to 7 percent of the healthcare budget can be re-allocated if all the institutions achieve the regional average or the best practice.

The implications of this study can be useful for policy makers and the HA top management. In the context of resource scarcity, this study allows managers to identify the areas where the institutions can achieve a higher level of efficiency without negative effects on quality of care moreover it allows managers to re-allocate resources toward services with more value for patients.

In the following table details of the three papers are reported: title, objective, variable, methods, results and contributions.

Title	Objective	Variables	Methods	Results	Contributions
1. A contingency perspective on performance measurement system design in the Italian healthcare sector	To detect what variables influence the PMS features at a macro level of healthcare sector in a contingency framework.	Contextual variables: External environment, size, strategy and culture PMS features: multidimensionality, openness to benchmarking, tools integration, type of communication and type of control.	A qualitative research was conducted between January 2008 and June 2009 involving Italian regional health councillors and heads of regional health departments. 15 Regions (over 21) participated at the research.	Findings regarding external environment and strategy are consistence with the general contingency propositions. Adaptation and new propositions concerning size and culture in the healthcare sector are provided.	It is an explorative paper that provides insights for forward contingency-based research on healthcare management control systems and contextual factors.
2. Comparing quality incentives across healthcare systems in England and Tuscany: from financial incentives towards social drivers	To compare English NHS performance framework approach with the Tuscan Performance Evaluation System approach.	Characteristics of governance framework: enactment; intricate and holistic; compatible with and makes use of and norms and values.	Comparison of two case studies: the English NHS and the Tuscan Health System.	While the performance framework of English NHS has received significant criticism, the Tuscan Performance Evaluation System as evidence of effectiveness thanks to the reputational lever. Implication for the English NHS are discussed.	It is a discussion paper on the role of social drivers in the healthcare governance tools.
3. Disinvestment for reallocation: a process to identify priorities in	The aim of the paper is to describe the study carried out in the Tuscan	Data coming from the Tuscan Performance Evaluation System of 2007.	An empirical study was conducted using benchmarking technique.	The results of the analysis demonstrated that, at the regional level, 2 to 7 percent of the healthcare budget can be	It fits in an important and growing area of health policy research and practice. This paper

healthcare	Health System in Italy on how to set priorities in the disinvestment process for reallocation.			re-allocated if all the institutions achieve the regional average or the best practice. In the context of resource scarcity, it allows managers to identify the areas where the institutions can achieve a higher level of efficiency without negative effects on quality of care and instead re-allocate resources toward services with more value for patients.	covers an important and much under-researched topic. It represents some necessary first-steps in the measurement of resource reallocation and efficiency improvements.
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1. Author: Milena Vainieri – working paper

2. Authors: Patrick Brown, Micheal Calnan, Milena Vainieri, Anna Bonini and Sabina Nuti. Paper presented at the 19° EHPG meeting in London on September 2009. Up to now it has been submitted to the reviewed journal *Health Economics, Policy and Law*.

3. Authors: Sabina Nuti, Milena Vainieri and Anna Bonini. Article in press on the journal *Health Policy*. A previous version of the paper was presented at the 17° EHPG meeting in London on September 2008.

3. Conclusions and other related deliverables.

This thesis aims to provide some insights on the relationships among PMS and context in healthcare sector.

In particular the relationships have been analyzed throughout three dimensions:

The first dimension focuses on analyzing the impact of the context on the design of the PMS.

The second dimension deals with the process of PMS in order to be accepted and used by stakeholders. In particular this dimension analyzes the role played by social drivers in making a PMS effective in a sector dominated by professional bureaucracy.

The last dimension concerns the use of PMS as a strategic tool in order to manage performance. In particular this dimension focuses on the role played by PMS in the resources reallocation process within services.

The three papers presented in the next chapters are mainly based on qualitative methodology: interviews and consensus seminar, comparison of case studies and empirical analysis through an action research approach.

As regards the contributions of the paper, while the first paper "A contingency perspective on performance measurement system design in the Italian healthcare sector" is an explorative study that seeks to provide some insights on the factors and relationships to be analyzed in the healthcare sector throughout other quantitative techniques; the other two papers contribute both to enhance knowledge in the management literature on healthcare and to provide evidences for policy implications in healthcare sector.

In addition, the papers presented concern three different level of analysis:

- Regional level (the paper dealing with the use of PMS)
- National level (the paper dealing with the design of PMS)
- International level (the paper dealing with the process of PMS)

The last study was carried out in close collaboration with the University of Kent.

Finally the research activities carried out during the three years PhD period (2007-2010) led to several deliverables that can all be addressed to the three dimensions of design, process and use of PMS. Most of them are working papers presented at international conferences or Italian books and reports, other deliverables have been already published on Italian or foreign peer reviewed journals.

The following table reports the additional deliverables carried out during the three years PhD research activities.

Topic	Title and authors	Type of deliverable	Main contents	Methods
DESIGN OF PMS	Nuti S, <u>Vainieri M</u> (a cura di) <i>Fiducia dei cittadini e valutazione della performance nella sanità italiana.</i>	Editing in Italian language: Edizioni ETS in 2009. In the book one I'm the author of the chapter on the results of the state of the art of PMS in Italian Healthcare Sectors and the co-author of the chapter related to the method used for carrying out the research	The book contains the results of the qualitative research on the characteristics of PMS adopted by the Italian Regional Health Systems. It collects also a research carried out by Kent University on the topic of trust in healthcare and the results of interviews that involved 7 different point of views of the Italian stakeholders on the topic of trust in healthcare.	Two qualitative researches were conducted between January 2008 and June 2009 involving Italian regional health councillors and heads of regional health departments and 7 different stakeholders. Critical essays on the topic of trust in healthcare and the role of performance evaluation.
	Nuti S, Bonini A., Murante AM, <u>Vainieri M.</u> <i>Performance assessment in the maternity pathway.</i>	Published on an international reviewed journal: Health Services Management Research Volume 22 Number 3 in 2009	The article describes the multidimensional performance evaluation system designed for the maternity pathway in the Tuscan Health System.	Action-research approach dealing with administrative data and survey.

Topic	Title and authors	Type of deliverable	Main contents	Methods
DESIGN OF PMS	<u>Vainieri M</u> , Calabrese C, Campanale C., Panero C, Nuti S. <i>Strumenti di governance del sistema sanitario toscano: la valutazione della performance degli Estav</i>	Published on an Italian reviewed journal: Mecosan n.69 in 2009.	The article describes the multidimensional performance evaluation system designed for ESTAV the new public bodies to which administrative services were centralized in the Tuscan Health System. It is seen as a tool of communications among several actors.	Action-research approach dealing with administrative data and survey.
	Panero C, Calabrese C, Campanale C., <u>Vainieri M</u> , Nuti S <i>Un particolare processo evolutivo nel Marketing degli approvvigionamenti: il caso degli Estav</i>	Published on an Italian reviewed journal: Mercati e competitività, it is forthcoming.	The article aims to assess the effectiveness of the centralization process that concerned the purchasing activities of the Tuscan Health Authorities.	Empirical analysis on administrative data and documental analysis.
	Nuti S, Daraio C, Speroni C, <u>Vainieri M</u> <i>Developing a combined quantitative benchmarking system for the measurement of the performance in the health care sector: the case of the Tuscany region in Italy</i>	Paper presented at the 21° EWEPA Conference, Pisa 23-26 June 2009. It has been submitting to an international journal.	The paper provides the analysis of efficiency across Tuscan Local Health Authorities.	Quantitative analysis through using Data Envelopment Analysis.

Topic	Title and authors	Type of deliverable	Main contents	Methods
DESIGN OF PMS	Cinquini L, <u>Vainieri M</u> , Campanale C <i>La misurazione dei Dipartimenti di prevenzione: il caso del sistema dei 'prodotti finiti' nella Regione toscana</i>	Published on an Italian reviewed journal: Politiche Sanitarie Vol.10 n.3 in 2009.	The article describes the results of a two years action research project involving healthcare practitioners on how to measure the prevention services.	Constructive research approach. Empirical analysis on survey data.
PROCESS	Nuti S, Bonini A, <u>Vainieri M</u> <i>Managing gaming phenomena in the Tuscan performance evaluation system</i>	Paper presented at 23°PCSI Conference, Lisbon 8-12 october 2008	The paper tested if the reputational lever can help in managing gaming phenomena in the Tuscan Health System.	Constructive research approach.
	Cinquini L, <u>Vainieri M</u> , Campanale C <i>Measuring Primary Care Services Performance: Issues and Opportunities from a Home Care Pilot Experience in the Tuscan Health System</i>	Published on an international reviewed journal: Health Services Management Research Volume 21 in 2008	The article deals with the definition of a framework for measuring primary care services. It highlights that the success of the tool is linked to the professionals commitment.	Action research approach.
USE OF PMS	Nuti S, Bonini A, <u>Vainieri M</u> <i>How to link performance measurement to performance management: the Tuscan Health System experience</i>	Paper presented EIASM 5° Conference on Performance Measurement, Management and Control, Nice 23-25 September, 2009.	The paper provides some insights on which are the elements that can shift performance <i>measurement</i> tool into performance <i>management</i> tool.	Case study on the Tuscan Performance Evaluation System

Topic	Title and authors	Type of deliverable	Main contents	Methods
USE OF PMS	Nuti S, <u>Vainieri M.</u> <i>Federalismo fiscale e riqualificazione del Servizio Sanitario Nazionale.</i>	Editing in Italian language. Edizioni Il Mulino. Forthcoming. I'm the author of the first chapter on the fiscal federalism and its impact on the quest for a new resources allocation process. I'm the co-author of 4 chapters (over 7 chapters) on the research on standard cost in healthcare.	The book suggests a possible technique to be applied in order to cope with the inefficiency of healthcare sector throughout the definition of the standard cost formula for the healthcare regions.	Empirical analysis on Italian administrative data

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CHAPTER 2 - A contingency perspective on performance measurement system design in the Italian healthcare sector¹.

This paper aims to detect the factors that have influenced the performance measurement systems design in a contingency based framework in the Italian healthcare sector. The Italian health reforms of 90s as well as the recent federalist reform of 2009 have led Regions to shape their own organizational structures and relationships among health system actors. As a consequence of these reforms 21 Regional Health Systems were established; they are significantly different from each other both in terms of organizational structures and the governance tools used. Results of this explorative study could provide with insights for further analyses the contingency based research regarding performance measurement system and contextual factors.

Keywords: performance measurement system, contingency theory, healthcare sector.

1. Introduction.

A large number of factors among which rising costs, technological advancements, aging population, health market failure and medical errors, led many industrialized countries to manage their "health production" and their health goals through performance measurement (Smith 2002, Arah et al 2006, Kelley and Hurst 2006). In this context it became a commonplace for countries to formally assess the performance of their healthcare system (McLoughlin et al. 2001, Roland 2004, Rosenthal et al 2004).

The proliferation of health indicators and performance measurement systems (PMS) has led several academics and umbrella organizations such as the World Health Organization (WHO) and the Organization for Economic Cooperation and Development (OECD) to develop conceptual frameworks and models in order to help countries in

¹ The author acknowledges all the colleagues of Laboratorio Management e Sanità who took part in the research activities for their helpful discussions. In particular, the author is indebted to Prof. Sabina Nuti, the scientific responsible of the research project and Francesco Niccolai for managing relationships and discussions with the Italian Health Councillors and their delegates and Prof. Lino Cinquini for his review.

building effective tools (Arah et al 2003, Arah et al 2006, Murray and Evans 2003, Smith 2002, Veillard et al. 2005, Chang et al 2002).

As a consequence of this proliferation many papers and reports on the description of the PMS adopted by countries and their comparison have been written (Ballantine et al.1998, McLoughlin et al. 2001, Pink et al 2001, NHS Executive 1999, CIHI 2000, Chang et al 2002) generally throughout the use of case studies or monographic issues.

This paper aims to detect the factors that have influenced the PMSs design in a contingency based framework using the results of a research carried out in 2008-2009 on the characteristics of the PMSs adopted by Italian Regional Health Systems (IRHSs).

Authors that analyze the factors influencing the PMS design in healthcare sector have carried out studies at hospital level using both qualitative (Jarvinen 2006, Jacobs et al 2004, Preston 1992) and quantitative (Thorley Hill 2000, Abernethy and Stoelwinder 1990, Abernethy and Brownell 1999, Abernethy and Vagnoni 2004) methods.

Abernethy and Stoelwinder (1990) found out that Mintzberg's professional bureaucracy model concerning control is not always true for hospitals. This finding opens the doors for interesting analysis about contingency theory in healthcare sectors.

In healthcare literature, papers find out that some external environmental factors such as normative pressure or changing in financing system have had a relevant impact on performance measurement systems: Thorely Hill (2000) applied a statistical model to analyze the impact of external, financing, competition and organizational variables on the introduction of accounting system in the US hospitals between 1980 and 1990. She found out that the strongest factors influencing the introduction of cost accounting is the financing reforms based on DRG. According Jarvinen's study (2006) on two Finnish hospitals, innovative performance measurement tools such as ABC are mainly influenced by institutional pressure and financial constraints but also by professionals' motivation. Analyzing US hospital during 1960-1970 Preston (1992) warns that the emergence of accounting systems cannot be explained merely as being contingent upon changes in environmental conditions and internal structures. He asserted that there is a wide range of discourses related to medical knowledge and practice which constitute and are constitutive of the emergent techniques. It is widely recognized the key role of professionals in healthcare sector in fact many papers focused on the analysis of professionals participation in budgeting and the clinicians

attitudes towards accounting tools (Abernethy and Vagnoni 2004, Jacobs et al 2004, Jones and Dewing 1997).

The majority part of papers that treat contingency based research on performance measurement tools is based on the hospital level, this is probably due to the focus on professionals' behaviour and the availability of data. The Italian healthcare sector provide an ideal setting to test and develop contingency analysis at an upper level: the Regional level. In fact in the Italian health sector, the development of PMS can be traced back to the 90s reforms that introduced managerial tools and devolved the organization and assessment of healthcare services to Regions. This devolution, enforced by the recent federalist reform of 2009, has led Regions to shape their own organizational structures and relationships among health system actors (Formez 2007, Censis 2008). As a consequence of these reforms, Italy has now 21 Regional Health Systems with significant differences from each other. On the basis of these considerations the Italian health sector provides with an interesting scenario in order to detect and analyze the factors that could have played a key role in the PMS design on a macro-level of analysis such as the Regional governments.

Due to the focus of the analysis (the macro level), the professionals' attitudes, although is a topical factors, is not detected. Starting from the general proposition concerning how contextual factors influence management control systems formulated by Chenall (2003) this paper suggests adaptations and new propositions related to PMS for the regional level. The results of this explorative study could provide with insights for further analyses on the contingency based research regarding PMS and contextual factors in health sector.

2. Research method and theoretical framework

The empirical study was carried out in the Italian Regional Health Systems (IRHSs). Given the focus on the performance measurement tools used by senior manager and policy makers of the IRHSs, all Regional councillors and Regional heads of health departments were invited to participate in the study.

The collection of field data mainly took place in the second half of 2008 although contacts with the Italian Regions spanned a period of more than one year. Data collection primarily comprised semi-structured interviews and archival data. Interviews were conducted by two researchers using an open approach so that interviewees could highlight their meanings and perception about the PMS and the field situation (Patton 1990).

The interviews focused mainly on three topics: the description of tools used for measuring the performance of health services, the appraisal of these tools and the features of the ideal tools. A total of 15 interviews (over 21 Italian Regional Health Systems), generally lasting between 1 and 2 hours, were conducted. Some Regions did not participate in the study because of institutional reasons such as the Health Councillor election. Taking into account these issues the answer rate was high and the responses were quite balanced across Northern, Central and Southern Regions (see fig. 1).




 Regions that participated in the study

Fig. 1 – Italian Health Regional Systems which participated in the study.

Interviews were recorded so that researchers could better adopt an interpretative approach, thus examining the symbolic meanings which link PMS to the context in which they are formed².

Each interview was sent to the interviewees for its validation. In addition preliminary results of the cross-regional analysis were presented to those who participated in the study in a feedback seminar held at the end of January 2009. The discussions evolved on this occasion represented an effective means of the cross-validation of the preliminary interpretations on the IHRs responses on the characteristics of PMSs³.

A contingency based approach was used in order to identify the relationships among the factors that influenced the PMSs features. In Italy PMS did not have the same centrality as they had in the Northern European countries. While Northern European countries have massively invested in PMS with strong reliance on arm-length organisations, in some cases, they combined this investment with a return to competition and quasi markets (as in the English system). Italy, just like the other

² The interpretative approach is required by the fact that managers' value is influenced and influence the institutional environment in which it operates (Modell 2001)

³ The results of the state of art of the PMS of the IHRs were presented in a public conference in June 2009 and they are collected in a research report (Nutti e Vainieri 2009).

Mediterranean countries with the partial exception of some regional governments, did not have the same evolution (Neri 2009). Hence the term *performance measurement system* in this paper has been considered on a broader perspective: it takes into account not only the formal aspects of performance measurement but also the informal forms of control (whereas they are declared or captured by researchers) so that it is quite close to the management control system (MCS) concept (Chenall 2003).

This paper detects the influence that contextual factors, such as external environment, size, strategy and culture have on the multidimensionality, the openness to benchmarking, the integration and the type of communication as characteristics of PMS. In the following paragraph definitions of the influencing variables used in this paper are provided. Moreover general propositions related to each influencing variable are reported. These propositions come from the Chenall review of 2003. The purpose is to verify whether they can also be applied also to the regional health system level and eventually to add new possible proposition that can be detected throughout further investigation.

Box 1 collects definitions of the PMS' characteristics used in the paper. These characteristics were classified on the basis of the responses classification and the descriptor definitions as indicated by Creswell's steps concerning qualitative analysis (2002): once interviews were transcribed and validated by participants through emails, all data were collected and coded in order to provide a description of IRHS' PMS. This process of coding and description was discussed within the research team and then it received other two types of validation: the feedback from the participants (the member-checking) and the review of the project made by external auditors who also took part in the seminar held in January 2009.

2.1. Definitions of influencing factors.

Chenall (2003) collected the findings of the studies carried out between 1980 and 2000, concerning the contingency theory applied to management control systems design within organizational context. He derived a series of general propositions relating management control systems to organizational context.

Traditionally key variables that influence the design of management control systems were categorized into four tiers: environment, technology, structure and size (Waterhouse and Tiessen 1978; Otley 1980). Other two variables could be added to these traditional factors: strategy and culture (Chenall 2003).

Due to the extent of the contextual variables this paper focuses on the impact that the external environment, the size, the strategy and the culture can play on the management control systems adopted by IHRs.

External environment

The external environment is a powerful contextual variable that is the basis of the contingency-based research. Many aspects can be related to the external environment such as uncertainty, ambiguity, complexity and turbulence (Chenall 2003).

Although the focus of the analysis focuses on the same sector within the same country (so that many external environment variables are shared by all Italian Regions), some factors, such as the turbulence in the regional political spheres or the tightness of imposition on deficit made by the central government may cause the intensity of these variables to change. In this paper uncertainty, central government reforms and central pressure on financial deficit are taken into account. A snapshot of the financial deficit situation of IHRs is showed in table 1.

The general propositions related to the external environment that are detected in the study are: P1. "The more uncertain the external environment the more open and externally focused the MCS" and P2. "Where MCS focused on tight financial controls are used in uncertain external environments they will be used together with an emphasis on interpersonal interactions" (Chenall 2003). P3 "The more hostile and turbulent the external environment the greater the reliance on formal controls and an emphasis on traditional budgets."

Size

The size of organizations has an impact on the type of control and management tools adopted: generally a growth in size requires to handle more information and leads to the introduction of rules and documentations (Chenall 2003). In Italy the number of inhabitants across Regions varies from 122.000 to 9.000.000. This large gap could influence the choice and the characteristics of the management control tools used in the IHRs. Besides the population, another measure of size taken into account is the number of Health Authorities belonging to each Regions (see table 1 for realizing the variability across IHRs).

The general proposition related to size is P4. "Large size is associated with an emphasis on and participation in budgets and sophisticated controls" (Chenall 2003).

Strategy

Strategy is a particular variable of the contingency-based research because it leads to recognize that managers have strategic choice whereby they can place their

organizations in particular environments. To a certain extent it is in contrast with the general contingency position according to which managers are captured by their operating situation. In a sense it is not an element of the context but it is a means used by manager to influence the environment, the technologies and the organization (Chenall 2003). There are several classifications of strategy and Langfield-Smith (1997) grouped them on the basis of the positioning (cost leadership – differentiation), the typology (entrepreneurial – conservative) and the mission (build – harvest).

Recent studies carried out in Italy highlighted that Regions adopted different strategies pointing on cooperation, on competition or a mix of both with different degree (Censis 2008, Formez 2007, Neri 2008). Table 1 reports the regional strategies according to the Formez (2007) definitions.

In this paper the strategy will refer to the typology variable according to it entrepreneurial strategies pursue innovation while conservative strategies engage in innovation with reluctance usually as a response to serious challenges.

Proposition related to strategy detected in the paper is P5. "Entrepreneurial strategies are associate with both formal, traditional MCS and organic decision making and communications" (Chenall 2003).

Culture

In his review Chenall (2003) reported definitions of culture related to national culture. To this extent culture was defined as knowledge, belief, art, morals, law, customs and other capabilities and habits acquired by man as a member of society. Some authors (Flamholtz and Das 1985, Henri 2006) analyzed the impact of culture on MCS referring to the organizational culture. According to this perspective two dilemmas could be analyzed: the control/flexibility dilemma which refers to preferences about structure, stability and change or the people/organization dilemma which refers to differences in organizational focus (Quinn and Rohrbaugh 1983).

The Italian Regional Health System could be analyzed from both the organizational and the national perspective of culture. In Italy, each Region has its own dialects (somehow real language) traditions and beliefs which make it unique. Moreover although the national identity weakened these aspects⁴, the historical gap between Northern and Southern Regions is still alive (see table 1 in order to classify Regions across the areas). According to the common stereotypes, Northern Regions are more industrialized and people have entrepreneurial approaches, they are used to operate

⁴ There is an ongoing debate for introducing an hour of dialect in the schools or to put on air local news in dialect in order to keep regional traditions alive.

following rules and they expect that services to be organized in an efficient way (as it emerged from the periodical issues of the Osservatorio sul federalismo fiscale of Veneto Regions 2007, 2008,2009). On the contrary, the stereotype of Southern Regions sounds like an old movies: criminality still affects the public services (Lanzillotta 2008) and the voice of public opinion is traditionally weaker and political patronage is strong and omnipresent (Neri 2009). From an the organizational perspective, the Italian essays on Regional Health Systems usually classify IHRs MCS between bureaucratic model of control (IRHS more used to associate control tools to formal documents and rules) and flexible approach to control (IRHS more used to associate at the formal control also organic forms of control such as negotiation) (Formez 2007, Longo 1999)

The purpose of this paper is to detect whether traditional orientation to measuring (named in the paper "culture of measure") influences the design of MCS adopted by IHRs. To this extent a new proposition related to culture has been detected: P6."The heritage of a culture of measure is associated with an emphasis on sophistications and organic MCS".

Table 1 summarizes statistics and comments found out in the Italian literature on IHRs which could be related to the selected contextual factors.

Table 1 – A snapshot of the main statistics and comments of the IHRs related to contextual factors.

Regions involved in the study	Area	Population¹	N° of Health Authorities²	Financial deficit³	Strategy²
Piemonte	North	4.352.828	30	-	Mix oriented to cooperation -
Lombardia	North	9.545.441	44	+	Competition
Bolzano	North	487.673	1	+	Cooperation
Trento	North	507.030	1	-	Cooperation
Veneto	North	4.773.554	23	+	Cooperation
Friuli Venezia Giulia	North	1.212.602	9	+	Mix oriented to competition -
Liguria	North	1.607.878	8	Recovery Plan (deficit covered by other regional resources)	Mix oriented to cooperation -
Tuscany	Centre	3.638.211	16	+	Mix oriented to cooperation -

Regions involved in the study	Area	Population¹	N° of Health Authorities²	Financial deficit³	Strategy²
Umbria	Centre	872.967	6	+	Mix oriented to cooperation -
Marche	Centre	1.536.098	3	+	Mix oriented to cooperation -
Campania	South	5.790.187	21	Recovery Plan	Mix oriented to cooperation -
Puglia	South	4.069.869	14	- -	Mix oriented to cooperation -
Basilicata	South	591.338	7	-	Mix oriented to cooperation -
Sicily	South	5.016.861	26	Recovery Plan	Mix oriented to competition -
Sardegna	South	1.659.443	9	Recovery Plan (deficit covered by other regional resources)	Cooperation

¹ ISTAT, 2007 data.

² Formez 2007 on 2005 data.

³ Balduzzi 2008, Fiorani and Meneguzzo 2008. - is deficit; + is equilibrium on 2007 data.

Box 1. Definitions of PMS characteristics.

Contingency-based research focused on a variety of dimensions of MCS from budgeting (ie. participation, formality of communications, system sophistication, rewarding systems) to information (ie. scope, timeliness, aggregations).

In this study the dimensions analyzed are: multidimensionality, openness to benchmarking, integration among control tools and communications.

Multidimensionality

Since the 80s there was a growing dissatisfaction with traditional performance measurement systems, especially because of the excessive focus on financial performance; this led to the development of innovative performance measurement models based on multidimensionality (Kaplan 1984; Lynch, Cross 1991; Fitzgerald et al. 1991; Nanni et al. 1992).

Within public health services the need for measuring across multiple dimensions is emphasized by the existence of a large number of stakeholders (Niven, 2003, Baraldi 2005, Ballantine et al.1998).

In addition the type of dimensions applied to the performance measurement systems is the most recurrent aspects that has been investigated in the cross analysis concerning performance measurement systems (Smith 2002, Vasselli 2005, Hurst and Jee-Hughes 2001, Kelley and Hurst 2006).

In this paper this descriptor investigates the type of dimensions and also to the sophistications used for measuring dimensions' indicators.

Openness to benchmarking process

"(...)benchmarking is a systematic and continuous measurement process: a process of continuously measuring and comparing an organization's business processes against business process leaders anywhere in the world to gain information which will help the organization to improve its performance" (Watson, 1993). The use of benchmarking in measuring performance in the health sector gained growing relevance at several levels: international level (Jhonston 2004), national level (NHS Executive 1999, CIHI 1999), regional level (Nutti 2008) and organizational level (Barretta e Vagnoni 2005, Baraldi 2005). This paper analyzes whether IHRs use benchmarking process and are interested in applying it outside the regional boundaries.

Tools' Integration

IHRs get a variety of governance tools (Formez 2007) this descriptor aims to analyze the connection among them with a particular focus on the rewarding system of Chief Executive Officers of the Health Authorities. It is recognized that management tools should be managed in a coordinated way, especially the linkages between rewarding system and budgeting (Flamholtz 1979, Ouchi 1979). The connection between them is a crucial factor that can determine the effectiveness of PMS at the organizational level (Brunetti 1999, Bergamaschi 2000).

The study analyzes whether there is any connection among tools integration and the other contextual factors.

Type of communication

The type of communication is another factor that can highlight differences across management control systems used by IHRs. Professionals involvement is a determinant factor of effective PMS (Abernethy and Brownell 1999, Abernethy and Vagnoni 2004, Aidemark 2001, Norhtcott and Llwellyn 2005). The provision of results is one of the levers that can be used to involve professionals. Some authors (Hibbard et al 2003; Bevan and Hood 2006) assert that if the publication of performance results respects some attributes (it contains a ranking system, it is widely disseminated, it is easily understood by the public and it is followed up by future reports), it can be a driver of changing performance in health sector because of the reputational damage. To this extent it is interesting to analyze the differences across IHRs and the role played by contextual factors in determining them.

Due to the fact that interviews were conducted following an open approach, often Regions did not answer to all items detected. Responses are collected into four tables corresponding to the four PMS characteristics. Comments on the relationships among

influencing factors and PMSs features are supported by quotations of interviewees reported in italics. This type of representation is one of the most used techniques in the qualitative research concerning social phenomena (Creswell 2002).

Regional responses connected to the four PMS characteristics are reported in tables, moreover some quotations are reported also in the text because they highlight the impact of contextual factors on PMS' characteristics and are those already discussed with the research team and all participants as representatives of possible relationship with external factors - strategy – culture and size.

3. Results

This section analyzes the impact that environment, size, strategy and culture can have on each of the five dimensions analyzed. The results came out from the interpretation that researchers gave to the perceptions of the interviewees and the analysis of the official documents.

3.1. The impact on multidimensionality

It seems that multidimensionality has become a commonly used aspect in the common culture of measurement of health services in the IHRs. Regional responses concerning the dimensions analyzed by regional tools are multiple: IHRs declare that their tools aim to measure not only the financial performance but also appropriateness, quality and, where it is possible, also responsiveness (as showed in table 2).

As it also emerged in a recent monographic issue of an Italian journal that reports the description of seven Regional PMSs, Regions developed PMSs first focusing on standards and targets concerning managerial efficiency and cost containment, and then extending their attention to other issues (Agenas 2008). Even if there are many common dimensions such as the financial performance across all IHRs, there are several differences regarding the inclusion of some dimensions and their relevance or the sophistication of the technique used in order to measure indicators.

Table 2 - Regional responses on multidimensionality

Regions	Dimensions	Information about techniques
BASILICATA	<ol style="list-style-type: none"> 1. Acute care 2. Territorial services 3. Primary care and prevention 4. Continuity of care 5. Integration between social and sanitarian care 6. Customer satisfaction 7. Financial perspective 8. Human resources 	<p>BSC is the theoretical framework declared by the interviewees. Standards are set by the regional law 329/2008.</p> <p>There are both common and specific targets across Health Authorities.</p> <p>They are often based on normative fulfilments as in the case of customer satisfaction.</p>
CAMPANIA	The recovery plan's dimensions are monitored	--
FRIULI VENEZIA GIULIA	<ol style="list-style-type: none"> 1. Efficiency 2. Equity 3. Promoting the good clinician practices 4. Improvements on population's health status 	<p>Most of indicators are based on hospital data. <i>The 90% of primary care services measures is an indirect indicator of primary care performance because it comes out from hospital information systems such as the hospitalization rate for the heart failure...</i></p> <p>As regards as the customer satisfaction, it was carried out by a patients' association thorough audits.</p>
LIGURIA	<p>Mainly the recovery plan's dimensions are monitored. <i>Liguria is one of the regions that have to follow a recovery plan from the financial deficit so that many actions, objectives and tools are determined by this particular situation</i></p> <p>There are indicators of efficiency, appropriateness and health production.</p>	-
LOMBARDIA	<ol style="list-style-type: none"> 1. Financial and efficiency perspective 2. Outcome 3. Customer satisfaction 	
MARCHE	<ol style="list-style-type: none"> 1. Population's characteristics; 2. Need 3. Demand 4. Supply 5. Access 6. Outcome/output 7. Financial perspective 	Supply chain model is the theoretical framework declared by interviewee.
PIEMONTE	<ol style="list-style-type: none"> 1. Efficiency 2. Financial perspective 3. Ad hoc analysis (equity) 	<p>There is an observatory on equity and epidemiologic aspects that supports analysis for health policy.</p> <p>As regards as the customer satisfaction Regions is linked with a patients' association who carried out audits.</p>

BOLZANO	<ol style="list-style-type: none"> 1. Efficiency and economic sustainability 2. Appropriateness 3. Quality and outcome 4. Customer and citizens satisfaction 	<p>BSC is the theoretical framework declared by interviewees.</p> <p>As regards as the customer and citizens satisfaction, it was carried out by the regional statistician department using panel.</p> <p><i>Primary care measures are weak, we are not able to gather reliable information. So our systems are biased by the hospital side.</i></p>
TRENTO	<ol style="list-style-type: none"> 1. Regional strategies 2. Financial perspective 3. Efficiency 4. Quality 5. Appropriateness 6. Equity 	<p>EFQM model is the theoretical framework declared by interviewees for one of the PMS adopted.</p>
PUGLIA	<ol style="list-style-type: none"> 1. Efficiency 2. Financial dimension 3. Clinical performance 4. Appropriateness 5. Regional strategies 6. Customer satisfaction 	<p><i>There are too much indicators that are not systematized yet.</i></p>
SARDEGNA	<ol style="list-style-type: none"> 1. Activation of some pathway projects 2. Activation of projects mainly based on developing health information services 3. Financial perspective 4. Specific indicators for each Health Authorities 	<p>Indicators are derived by the Regional Health Plan.</p> <p>A top down approach was used in this stage.</p>
SICILY	<ol style="list-style-type: none"> 1. Appropriateness 2. Quality 3. Clinical risk management 	<p>Many control systems have been introduced with the recovery plan. <i>There is a general lack of control systems.</i></p>
TUSCANY	<ol style="list-style-type: none"> 1. Population health, 2. Regional policy targets, 3. Quality of care, 4. Patient satisfaction, 5. Staff satisfaction, 6. Efficiency and financial performance 	<p>Annual surveys are carried out in order to measure Patient satisfaction and Staff satisfaction.</p>
UMBRIA	<ol style="list-style-type: none"> 1. Quality 2. Efficiency 3. Appropriateness 	<p>The epidemiological observatory makes periodical studies on equity and outcome.</p>
VENETO	<ol style="list-style-type: none"> 1. Efficiency 2. Quality (for specific areas) 3. Appropriateness 4. Regional strategies 	<p>Standards are set by regional commissions based on professionals</p>

The influence of external environment

External environment influences the sophistication of measurement tools used for regional governance: most of regions claim that the majority part of indicators adopted concern with the hospital services as reported by Bolzano and Friuli Venezia Giulia:

Primary care measures are weak, we are not able to gather reliable information. So our systems are biased by the hospital side. (BOLZANO)

The 90% of primary care services measures is an indirect indicator of primary care performance because it comes out from hospital information systems such as the hospitalization rate for the heart failure...(FRIULI VENEZIA GIULIA)

The orientation of all systems to the hospital measures could be seen as a consequence of the introduction of the DRG system in the 90s. As underlined by several studies in healthcare sector, the introduction of DRG system as a financial tool affected the control tools used by health authorities (Modell 2001, Thorley Hill 2000, Jarvinen 2006). In Italy, the excessive growth of pharmaceutical expenditure registered at the beginning of 2000 and the scandals linked to the corruption of physicians for prescribing labelled drugs led to a national reform (Fattore and Jommi 1998) and a tight control over the growth of pharmaceutical expenditure (most of them were defined by the Italian law l. 405/2001) . This situation led most of Regions to monitor referrals not only in terms of costs but also in terms of appropriateness but also in the building of accurate informative systems (Otto et al 2004, Fattore and Jommi 2008). Therefore environment and past choices have influenced the current informative system on measuring hospital services and pharmaceuticals.

On the contrary, the lack of an environmental pressure on primary care (in financial terms) did not challenge Regions in developing additional, accurate and reliable measures for primary care services.

Consequently, past choices had an enduring influence on and continue to shape emerging change initiatives by narrowing the range of viable alternatives. This is the premise of the path dependency that reinforces some trajectories while precludes others (Modell et al 2007).

In such circumstances, normative pressure by the central government in order to reduce financial deficit is tighter in some regions such as Sicily, Liguria and Campania (see table 1) so that the attention of regional policy makers and managers is focused on costs and on the management control tools that strengthen the financial dimensions and efficiency indicators (see table 2). This is highlighted by the staff of the Liguria Health System:

Liguria is one of the regions that have to follow a recovery plan from the financial deficit so that many actions, objectives and tools are determined by this particular situation.(LIGURIA)

This finding is consistent with the proposition P3 “The more hostile and turbulent the external environment the greater the reliance on formal controls and an emphasis on traditional budgets.”

The influence of culture

Even if all regions declared to measure the same dimensions, interviews showed that Northern Regions, more used to measure, adopt sophisticated indicators or measurement tools while Regions that have recently adopted performance measurement control tools use simple set of indicators or traditional measures (see table 2).

It seems that there is an evolutionary path linked to the “culture of measure” in approaching and developing management control systems: Regions with a rooted “culture of measure” developed sophisticated technique or tools such as the Balanced Scorecard (Bolzano), the Performance Evaluation System (Tuscany), the EFQM model (Trento), the Joint Commission model (Lombardia) and the analysis of equity indicators (Piemonte) (Relazione Sanitaria della Provincia di Autonoma di Trento 2008, Relazione Sanitaria della Provincia Autonoma di Bolzano 2008, Agenas 2008)

In this perspective, the case of Basilicata Region is interesting. In 2008 this Region decided to adopt the BSC framework defining several dimensions, indicators and setting standards (DRG Basilicata 329/2008, D’Adamo Polistena 2009). This tool lies upon the formal document of the rewarding system; it uses simple technique and it is often linked to the verification of fulfilment required by law such as the customer satisfaction dimension: the indicator is not linked to survey’s results but to the fact that health authorities have put in place customer satisfaction survey. So this experience could really be considered innovative in the context of Southern Regions but it highlights that there is still a gap as regards as the sophistications of PMS of some other IRHSs.

Findings seem to be consistent with the first part of proposition P6. “The heritage of a culture of measure is associated with an emphasis on sophistications”.

PMSs adopted by IHRS tend to have a diversity of measures but there are differences in the number and the typology of dimensions analyzed; moreover, it emerged that there are differences in the sophistication of tools and technique applied. In particular, external environment seems to exert two types of influence: the reform related to the financing system of hospital services that brought the attention of management information system on the hospital measures as claimed by all Regions and the central pressure on the balance deficits of some Regions that led PMS to give more relevance to financial and efficiency indicators. The development of some measures (such as the equity indicators of Piemonte) or the sophistication of PMS in its whole seem to be affected by culture: innovative and entrepreneurial Regions have introduced PMS sophistication.

3.2. Openness to benchmarking

Interviewees are in favour of the introduction of benchmarking in their Regions. Benchmarking is perceived as a chance for learning and cooperating (as showed in table 3).

Table 3 - Regional responses on benchmarking

BASILICATA	<i>We are in favour of a general evaluation of health services. A minimum set of shared performance indicators can activate useful benchmarking processes.</i>
CAMPANIA	--
FRIULI VENEZIA GIULIA	<i>It is a must to enhance regional accountability. It is possible to identify a National set of indicators to be monitored at a Regional level. Sharing indicators and criteria is essential in order to guarantee a real comparison among Regions overcoming the risk of self referral assessment.</i>
LIGURIA	<i>We start participating in a regional network that could enable learning processes thanks to benchmarking outside our regional boundaries.</i>
LOMBARDIA	<i>No wind is good for whom that does not know the rhumb line. It's a strategic problem, benchmarking can be a crucial help in defining the rhumb line. Above all in the European context</i>
MARCHE	--
PIEMONTE	<i>We are in favour of a benchmarking within the Regions because we believe that we would be at a good level of performance and we would have the same problems of other Regions</i>
BOLZANO	<i>We are the first ones who want to start benchmarking mechanism as a learning tool</i>
TRENTO	<i>It could be defined National guidelines in order both to compare regional health system and to support Regions develop effective tool using the same methodological issues. A performance evaluation system at a National level may activate useful benchmarking processes across regional health services and may help improving local performance evaluation systems.</i>

PUGLIA	<i>[...] Although we get data benchmarking, at this stage we prefer adopting a soft approach: in our opinion the measurement process has to be a supportive management tool. The assessment linked to performance benchmarking across health authorities could lead to disadvantages above all in terms of relationships.</i>
SARDEGNA	--
SICILY	<i>We are definitely open to benchmarking. Benchmarking enabled us to identify and face the unacceptable gaps between Sicily and other Regions.</i>
TUSCANY	<i>Data benchmarking across health authorities enabled Regions to overcome self referral attitude and it enhanced learning and assessment processes in order to highlight best practices</i>
UMBRIA	<i>It is important to be able to compare measures at National level. It is more useful doing benchmarking with similar units outside its own Region than going on regional averages as in the case of Perugia teaching hospital that is the sole regional teaching hospital</i>
VENETO	<i>We are in favour of benchmarking at the National level. Results should be read by everyone. Indicators should be shared. Regions should create a linkage between National and Regional performance evaluation systems.</i>

The influence of external environment

Uncertainty about the future due to the economic crisis that imposes reduced resources for all sectors, the Italian fiscal federalism reform and the European parliament spectrum put health sector and policy makers to growing external pressures. This leads to an openness to benchmarking, as affirmed by Lombardia in the below sentence:

No wind is good for whom that does not know the rhumb line. It's a strategic problem, benchmarking can be a crucial help in defining the rhumb line. Above all in the European context (LOMBARDIA)

The favourable responses to a benchmarking openness across regional boundaries seem to confirm the proposition P1 "the more uncertain the external environment the more open and externally focused the management control systems".

The influence of size

Size is a determining factor in the degree of openness to benchmarking. Small regions such as Umbria or regions with a unique health authority such as Trento or Bolzano can apply benchmarking to a limited extent or they cannot at all (see table 3). Therefore, these regions feel, more than others, the necessity to look outside regional boundaries in order to gain the advantages of benchmarking.

It is important to be able to compare measures at National level. It is more useful doing benchmarking with similar units outside its own Region than going on regional averages as in the case of Perugia teaching hospital that is the sole regional teaching hospital (UMBRIA)

We are the first ones who want to start benchmarking mechanism as a learning tool (BOLZANO)

This finding is not consistent with the general proposition related to size (P4).

The influence of strategy

Somehow benchmarking is used as real regional choice in order to overcome self referral attitude and start learning process or even to face particular situations as highlighted by Tuscany and Sicily.

Data benchmarking across health authorities enabled Regions to overcome self referral attitude and it enhanced learning and assessment processes in order to highlight best practices (TUSCANY)

Benchmarking enabled us to identify and face the unacceptable gaps between Sicily and other Regions. (SICILY)

In other situations, benchmarking is perceived as an obstacle to the deployment of the regional strategy, as in the case of Puglia, because it could lead to a negative competition:

[...] Although we get data benchmarking, at this stage we prefer adopting a soft approach: in our opinion the measurement process has to be a supportive management tool. The assessment linked to performance benchmarking across health authorities could lead to disadvantages above all in terms of relationships. (PUGLIA)

Usually organizations that follow the strategies of prospector (entrepreneur) are more likely to be competitive oriented (Porter 1980). This is consistent with the conservative position of Puglia Region that in this situation rejected the competition because comparison is strictly seen as competition. It has to be noticed that the

openness to benchmarking of Tuscany and Sicily Regions is more oriented to break self referral assessment, therefore, comparison is not meant as the traditional concept of competition, but it is a tool to stimulate professionals to good performance.

3.3. Tools integration

Collected data showed that there is a wide range of management control tools adopted by Regions. Some of them are required by national law such as the CEOs rewarding system (d.lgs 229/99) and the accreditation system (d.lgs 502/92) that identify the technological, organizational and quality standard that structures must have in order to guarantee patients and to put in place competitive mechanism between public and private organizations (ASSR 2004).

Responses about tools' integration vary (as showed in table 4). Integration seems to be affected both by regional strategies (integration within PMS) and by culture, especially as regards as integration across control systems.

Table 4 – Regional responses about tools integration.

Regions	Main PMS and their integration	A focus on the rewarding system	A focus on accreditation system
BASILICATA	The three main performance measurement tools are at least summarized in the rewarding system		Up to now accreditation system is not integrated with the other PMSs.
CAMPANIA	The main PMS are: Recovery plan and Financial reports	Up to now Health Authorities' CEOs have no rewarding system. Indeed the last financial law cut the CEOs' compensation of about 30%. Our particular financial deficit situation cannot allow to reward CEOs.	--
FRIULI VENEZIA GIULIA	<ul style="list-style-type: none"> - Activity reports - Financial reports - Customer satisfaction surveys and audit made by patients' associations - Accreditation They should be integrated.	--	--

Regions	Main PMS and their integration	A focus on the rewarding system	A focus on accreditation system
LIGURIA	Tools adopted are: - financial reports - activity reports and waiting list reports	<i>Since few years ago there no rewarding system.</i>	Up to now accreditation system is not integrated with the other performance measurement systems.
LOMBARDIA	PMSs are: - Joint Commission - Administrative data analysis and inspections - Customer satisfaction annual surveys All systems are integrated	CEOs rewarding system is based on performance indicators and results of the PMSs previously described	<i>Up to now is not integrated but through a new law on accreditation, we are introducing the chance that a negative performance assessment should influence the possibility to provide services for the Regional Health System.</i>
MARCHE	PMSs applied in this moment are mainly oriented to reengineer the clinicians networks throughout management innovation projects.	--	--
PIEMONTE	There are many sources of information such as the plan of activities (mainly on the hospital data) and the recovery plan. Moreover there are ad hoc projects such as the analysis of equity dimension. <i>There is no connections among the PMSs. It makes difficult to have an overall and synthetic snapshot of the performance of each Health Authorities</i>	Only this year there are specific indicators linked to the rewarding system.	<i>We are working on accreditation system with the purpose to associate the accreditation process, above all for the public structures, with the quality improvement process [...]there will be also an integration between performance measurement and accreditation as in the case of the delivery pathway</i>
BOLZANO	The BSC has been planned since the beginning as a unique platform that enabled integration between both county and health authority plans with multidimensional objectives, it is able to give us the overall performance of health authority	Rewarding system is based on the BSC, the fiduciary relationship and other signals such as the management of the citizens' complaints	Up to now accreditation system is not integrated with the other performance measurement systems.

Regions	Main PMS and their integration	A focus on the rewarding system	A focus on accreditation system
TRENTO	<p>the main PMSs are:</p> <ul style="list-style-type: none"> - EFQM - regional strategies reports - financial reports - multidimensional reports of sanitarian residence for elderly <p>They are not all integrated. <i>We have some problems in interpreting data.</i></p>	The rewarding system consist of a 50% the performance evaluation of the Health Authority and a 50% on specific annual targets.	Up to now accreditation system is not integrated with the other performance measurement systems even if there should be an integration.
PUGLIA	There are too much indicators that are not systematized yet. There is an integration but it is not formally defined.	The rewarding system is not completely designed yet. It was due also to the particular situation that we are getting through.	Up to now accreditation system is not integrated with the other performance measurement systems. Regional managers try to find out the linkages among the systems.
SARDEGNA	Indicators are derived by the Regional Health Plan. They are used for the evaluation of Health Authorities' CEOs.		Up to now accreditation system is not integrated with the other performance measurement systems.
SICILY	Many control systems have been introduced with the recovery plan.	Up to now we are working on it in order to link rewarding system to the other control systems.	--
TUSCANY	<p>There is an integrated system that represents in an effective way all performances.</p> <p><i>Performance evaluation system of health authorities is multidimensional and it enabled both Region and Health Authorities to gather a synthetic snapshot of the overall performance. The introduction of assessment indicators and the target diagram was fundamental. The system is both easy and complex: easy to understand because of the friendly representation of the target diagram, complex because it enables to deeply analyze data.</i></p>	The majority part of CEOs rewarding system is based on the Performance Evaluation System.	<i>There is a new law on accreditation that goes over traditional systems. In this law accreditation will be integrated with performance indicators.</i>

Regions	Main PMS and their integration	A focus on the rewarding system	A focus on accreditation system
UMBRIA	There are many performance measurement tools mainly based on reports such as the activity reports, the pharmaceutical reports and so on.	Targets for the rewarding system are set by regional department and they are negotiated with the CEOs. A 65% of the rewarding system is based on performance measures, the 35% is linked to the qualitative assessment that regional department does on the overall assessment in particular concerning behaviours.	--
VENETO	There are many performance measurement tools. <i>It is worth of notice the PMS of transplant because it integrates budgeting, performance evaluation of CEOs with financing system (about 50%).</i>	There are few indicators used to reward Health Authorities' CEOs. There are some targets that have to be reached into three years such those related to structural investments, others that are linked to performance measures.	Up to now accreditation system is not integrated with the other performance measurement systems but there is an evolution. <i>In 2009 accreditation system will take into account also performance measures.</i>

The influence of strategy

The majority of the Regions have multiple systems to measure performance (as reported in table 4). Integration *within performance measurement tools* is not common and many regions claimed that the lack of integration among the several systems is the main weakness of their regional management control systems as reported by TRENTO *We have some problems in interpreting data* or PIEMONTE (as showed in table 4).

Regions that considered information integration as a strategy which is worthy to keep investing in, show an higher degree of integration among control tools.

The BSC has been planned since the beginning as a unique platform that enabled integration between both county and health authority plans with multidimensional objectives, it is able to give us the overall performance of health authority (BOLZANO)

Performance evaluation system of health authorities is multidimensional and it enabled both Region and Health Authorities to gather a synthetic snapshot of the overall performance. The introduction of assessment indicators and the target diagram was fundamental. The system is both easy and complex: easy to understand because of the friendly representation of the target diagram, complex because it enables to deeply analyze data. (TUSCANY)

Aidemark (2001) asserted that the Balanced Scorecard in Sweden played a key role and it was seen as an interactive tool to communicate strategy and to discuss with professionals. The integration of measures in this case is seen as an effective way to manage healthcare system, especially when it eases communication among stakeholders. To this extent this finding is consistent with the proposition P5 "Entrepreneurial strategies are associated with both formal, traditional MCS and organic decision making and communications". BSC could be considered a formal tool that is used interactively (organic communications).

The influence of culture

As regards as other management control tools, there are really few tools integration initiatives mainly promoted by Regions with an entrepreneurial culture. Regions used to measure are the pioneers of integration of performance measurement tools with other systems as reported by Veneto Region that considers its explorative integration of performance evaluation with financing system in the transplant sector as a best practice:

It is worth of notice the PMS of transplant because it integrates budgeting, performance evaluation of CEOs with financing system (about 50%). (VENETO)

This situation is more evident in the integration of performance measurement tools with accreditation system. Although all Regions issued regional law regarding accreditation system, studies of Formez (2007) and ASSR (2004) indicated that there are many differences among them.

Accreditation system is not integrated with performance measurement system. Only in 2009 some Regions (such as Tuscany, Piemonte, Veneto, Lombardia) declared they have been working on it as reported in this quotation:

We are working on accreditation system with the purpose to associate the accreditation process, above all for the public structures, with the quality improvement process [...]there will be also an integration between performance measurement and accreditation as in the case of the delivery pathway. (PIEMONTE)

These findings fit with the proposition P6 "The heritage of a culture of measure is associated with an emphasis on sophistications"

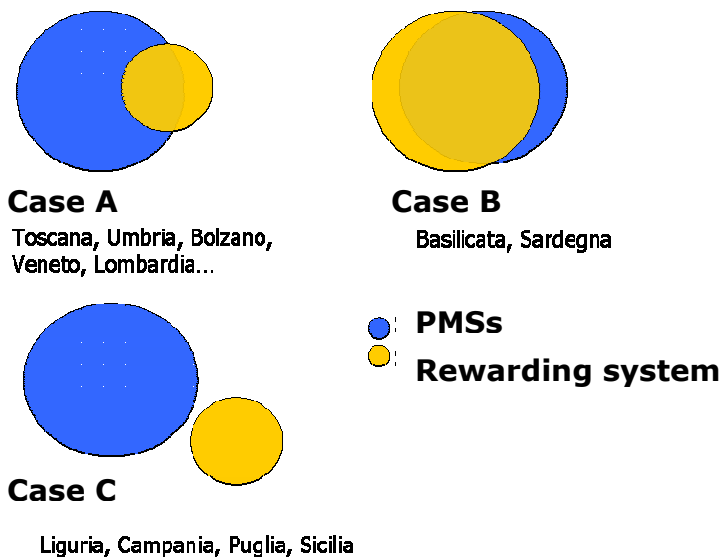
Integration between performance measurement tools and rewarding system can be classified into three groups (as showed in fig.2).

In the first group there are Regions that have coped with central pressure on the deficit control, they suspended the CEOs rewarding system or linked it to normative fulfilments (Case C).

In the second group there are Regions which show full integration between rewarding system and performance measurement system. These regions have recently implemented performance measurement systems, they decided to lie them upon the rewarding system (see DRG Regione Basilicata...). To this extent the rewarding system introduces an innovative way of measuring performance. It is the B case shown in fig.2.

The last group of Regions (Case A) is characterized by a partial integration of rewarding and performance measurement systems. These Regions decided to make a selection of measures to be rewarded adding to the PMS' measures also other type of decisions.

Fig. 2 – Integration between performance measurement systems and rewarding system (Vainieri 2009).



This kind of integration seems to derive from a several contextual factors: external environment such as the case C, cultural heritage such as the case A and also strategic innovation such as the case B. In this analysis no predominant factor for this type of integration was found.

3.4. Type of communication

What information is given to the stakeholders? And through which channels? Focusing on the three main stakeholders of the IHRs (top management of Health Authorities, professionals and citizens), it seems that there is a convergence in the widespread of the website. Generally, for the top management level the formal communication through documents or web is supported by meetings (see table 5).

Even if there is a growing effort in giving feedback about performance there is still much to do in order to have an effective communication as reported in the below statement:

Indeed the problem is that information is read and used only by people that work in healthcare [...] Information should reach more and more patient associations, and disabled people because there is still too little information about health (FRIULI VENEZIA GIULIA)

Although the convergence on the use of new technologies, some distinctions could be done on the basis of the role played by size, culture and external environment.

Table 5 - Regional responses on communication

BASILICATA	There are periodical meetings between Regional Department of Health and top management. Some data about performance are published on the regional website but usually information about health performance and channels of communication towards citizens are in charge of Health Authorities.
CAMPANIA	<i>Two years ago the performance feedback has been enabled. Every year performance results are communicated to CEOs, heads of departments and heads of primary care services throughout a conference in which synthetic reports are delivered.</i>
FRIULI VENEZIA GIULIA	<i>On the website of Regional Health Agency citizens and professionals can look up all indicators. Indeed the problem (referred to citizens) is that information is read and used only by people that work in healthcare [...] Information should reach more and more patient associations, and disabled people because there is still too little information about health</i>
LIGURIA	There are monthly meetings between Regional Department and Health Authorities top management about financial aspects and other strategic targets. Professionals can look up the website in order to monitor performance results. In some cases indicators were introduced throughout "Road map" for involving professionals.
LOMBARDIA	<i>We use different communication channels, above all the website. All professionals have to know what is the PMS results and its rules. Citizens can look up the website, in this case the main communication channel is the press.</i>
MARCHE	--
PIEMONTE	Every six months the regional department sends to Health Authorities monitoring reports as regards as regional targets. Information about health activities is updated every three/six months. Professionals may look up the information system to monitor performance of their Health Authorities.
BOLZANO	Top management and professionals can consult BSC reports while citizens can consult the annual health report
TRENTO	<i>The monitoring process of Health Authorities involves every three months both CEOs and middle management. All employees receive the annual social balance sheet. Citizens can consult performance results throughout on-line publications or papery ones.</i>
PUGLIA	<i>There is a continuous process of communication between Regional Department and Health Authorities' CEOs. We are nearing the end of an heroic situation [...] In this context we chose to [...] support health authorities with a model of "management proximity".</i> <i>Communication about health results towards citizens is still limited.</i>
SARDEGNA	There are few public reports and few data on the website. <i>The communication of results is based on the constant meeting between the Health Councillor and Health Authorities' CEOs.</i>
SICILY	<i>We are activating online access to professionals in order to consult health data. Local newspaper have been monitoring the ongoing changes that we are introducing every day since the new councillor is in charge. In addition, an email address has been activated in order to gather citizens' opinions</i>

TUSCANY	There are periodical meeting with top management of Health Authorities both jointly and separately. Top management and professionals can consult performance data, updated every three months online. Performance data are also available to citizens on a public website with an annual updating.
UMBRIA	<i>We invest lots of efforts in order to maximize the diffusion of reports on specific topics among professionals. Every year Regions send to all family an report on overall government activities where health has a predominant role.</i>
VENETO	Periodical meeting with top management of Health Authorities both jointly and separately. Moreover there are meetings that involved also professionals on specific topics. Citizens can consult the health report published every two years.

The influence of size

In small Regions such as Trento and Bolzano both formal documents and meetings are used. Due to the size of these regions, professionals are more involved in the process of the provision of performance results. Periodical meetings, that in large regions are generally held to discuss results with CEOs and top managers of health authorities, in small regions are often extended to middle management and in some cases as in Trento there is also a direct connection between Regions and employees of Health Authority.

The monitoring process of Health Authorities involves every three months both CEOs and middle management. All employees receive the annual social balance sheet. Citizens can consult performance results throughout on-line publications or papery ones (TRENTO)

In small size Regions, contacts between regional managers and local middle management are frequent. The possibility that Regions exert a centralized and in-depth control over services rather than over the Health Authorities' overall performance is high. Findings related to size are not consistent with the general proposition P4. "Large size is associated with an emphasis on and participation in budgets and sophisticated controls". Regarding the participation it seems to be quite the opposite: "Small size is associated with an emphasis on and participation" maybe it could be added "both formal and organic".

The influence of culture

In Regions where the culture of measure is relatively new, the main way of communicating performance results is still anchored to traditional channels: press to inform citizens and meetings to inform CEOs.

Two years ago the performance feedback has been enabled. Every year performance results are communicated to CEOs, heads of departments and heads of primary care services throughout a conference in which synthetic reports are delivered. (CAMPANIA)

Local newspaper have been monitoring the ongoing changes that we are introducing every day since the new councillor is in charge. In addition, an email address has been activated in order to gather citizens' opinions (SICILY).

The influence of external environment

In literature there is evidence that effective organizations combine tight controls with more open, informal and flexible information and communication systems (Chapman 1998, Chenall and Morris 1995, Simons 1987). In particular organizations facing extreme pressure have initially tighten control in order to keep surviving and then have adopted more organic controls (Chenall 2003). This situation seems to suite with what happened in Puglia: this Region applied tight financial controls putting in place unpopular decisions/strategies such as the closure of many hospitals and once it reached the financial balance, it applied informal and flexible systems as it could be derived from this quotation:

We are nearing the end of an heroic situation [...] In this context we chose to [...] support health authorities with a model of "management proximity" (PUGLIA)

The idea of "proximity" announced by Puglia means that regional managers and policy makers decided to be supportive with the top management of health authorities that faced the pressure of reorganizing services with cut resources and, in some cases, cut of services. They decided to establish a period of informal and flexible control systems (management proximity) in order to come over the "heroic" transition. A recent report on the Italian health sector (Fondazione Censis et al. 2009) confirmed this consideration: it showed that Regions with large deficits such as Sicily and Lazio are characterized by frequent meetings and informal contacts between Health Authorities

CEOs and Regional managers. This finding is therefore consistent with proposition P2. "Where MCS focused on tight financial controls are used in uncertain external environments they will be used together with an emphasis on interpersonal interactions"

4. Discussions and concluding comments.

The empirical findings of this paper can be summarized in the table 6.

		Influencing factors			
		External Environment	Strategy	Size	Culture
PMS characteristics	Multidimensionality	√			√
	Openness to benchmarking	√	√	√	
	Integration tools		√		√
	Type of communication	√		√	√

Table 6 – the relationship between PMS'characteristics and influencing factors.

Environment seems to influence the openness to benchmarking, the type of communication and multidimensionality. Data collected from interviews and official documents are consistent with both the general propositions P1 "the more uncertain the external environment the more open and externally focused the MCS" as shown in the case of the degree to openness to start benchmarking over regions and P2 "Where MCS focused on tight financial controls are used in uncertain external environments they will be used together with an emphasis on interpersonal interactions" as in the case of Puglia in the type of communication. Another finding is related to the path dependency of MCS in developing hospital measures due to the introduction of DRG system as financing mechanism among Regions and Authorities.

Size seems to influence two of the four characteristics of the management control systems: openness to benchmarking and type of communication. General proposition linked to size P4 "Large size is associated with an emphasis on and participation in budgets and sophisticated controls" does not seem to be consistent with the findings of the paper: small regions have adopted sophisticated controls. Maybe the concept of small and large does not fit with the regional level where even the smallest region could be considered as a large organization. On the basis of this last consideration the

following propositions could be suggested "Small size is associated with an emphasis on interpersonal communications and central control" as shown by the type of communications "Small regions are likely to adopt externally focused MCS" as shown by the openness to benchmarking.

Culture influences orientation to integrate control tools, type of communication and multidimensionality. Findings are consistent with proposition P6 "The heritage of a culture of measure is associated with an emphasis on sophistications".

Strategy influences openness to benchmarking and integration. The general proposition P5 "Entrepreneurial strategies are associated with both formal, traditional MCS and organic decision making and communications", gathered from Chenall's review, fits with findings related to both the characteristics of MCS analyzed.

The originality of the paper is linked to the methodology applied. In his review Chenall (2003) asserted that most of contingency-based studies used quantitative methods (linear regressions or structural equation models) but he also affirmed that case studies are powerful in order to identify research problems, and, develop and generalize theories. Hence, as Chenall suggested, this paper attempts to enhance the findings related to particular aspects of contextual factors in the health care field at a macro level. Evidences coming from this research could be used as a preliminary study for developing an in-depth survey within contingency-based frameworks.

Another contribution of the paper is linked to the level of analysis. Most of the studies on healthcare sector, related to contingency based research on management control systems design, deals with the hospital level (Abernethy and Stoelwinder 1991, Abernethy e Vagnoni 2004, Abernethy and Brownell 1999...). Few studies concerning upper level such as integrated healthcare networks (Lin and Wan 1999) or Regions (Formez 2007, Censis 2008) have been carried out. Moreover these studies mainly focus on particular contextual factors such as market competition or organizational structures and to this extent many contextual variables remain uncovered.

A clear limit of this paper is that contextual factors are analyzed in a separated way while there are evidences on the connections among them (Henry 2006, Schoonhoven 1981, Langfield-Smith 1997). Due to these considerations, it is important to underline that this paper has to be intended as an explorative empirical study. It could give some insights to be verified throughout a survey analysis regarding both the propositions and the role of interaction between contextual variables and management control design.

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CHAPTER 3 - Comparing quality incentives across healthcare systems in England and Tuscany: from financial and bureaucratic incentives towards 'social' drivers⁵

Governance systems which are based on assumptions of purposive-rational action have received significant criticism. For example the quality and performance frameworks of the English NHS function on the basis of incentives and sanctions, and have been critiqued in terms of both the logic on which they are run as well as a lack of evidence for their success. Yet the limitation of much of these critical appraisals is the failure to propose concrete, empirically-grounded alternatives. Thus as a means of adding to the literature, this paper seeks to perform three functions. Firstly it reviews the theoretical and empirical literature around governance in the English NHS as a basis of understanding the limitations of this 'standards and sanctions' dominated system. Secondly, it will present findings from research into the governance system applied in Tuscany, Italy as evidence of the effectiveness of using the reputation of professionals and departments as a basis of facilitating quality in the absence of sanctions. Implications – for the English NHS and governance more widely – are then discussed. A theoretically grounded alternative to purposive-rational approaches based on a more normative oriented understanding of human action and the 'civilising processes' of moral obligation is accordingly outlined.

Keywords: Clinical governance; Italy; moral obligation; performance; trust.

1. Introduction

Economic and socio-political pressures towards greater levels of efficiency, quality and performance are common across late-modern welfare states, yet are manifest in range of different forms (Burau and Vrangbaek, 2008). The prefix late- is applied here to denote a sense of institutional crisis or strain (Habermas, 1976). Such tension is apparent in an economic sense through the basic economic of problem faced by healthcare systems (rising demand, expectations and potential treatments versus limited resources) and welfare states more generally (Bonoli et al., 2000). There is also a crisis of legitimation faced by healthcare institutions regarding specific failures

⁵ Other co-author: Patrick Brown, Micheal Calnan, Sabina Nuti and Anna Bonini
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of individual practitioners (Alaszewski, 2002), a change in the way the professions are perceived and trusted by the public (Calnan and Rowe, 2008), and a heightened awareness of the uncertainty and fallibility of expert knowledge systems (Beck, 1992) – not least that of medicine (Alaszewski and Brown, 2007).

Alongside these crises and partly in response to them, a 'New' Public Management (NPM) has emerged over the past quarter century (Hood, 1995; Gruening, 2001). A more explicit accountability of performance – and the introduction of levers to effect an ongoing development of quality, efficiency and organisational learning – are central 'doctrines' of this approach yet the NPM-umbrella includes a vast array of methods and strategies. The governance of quality and performance thus varies across different public sector organisations within individual states and indeed between countries (Hood, 1995; Ferlie et al., 1996). Sectors and states differ in the extent to which the NPM paradigm has been predominant as well as in terms of the particular paths chosen.

The teleology and effectiveness of these different NPM strategies have received significant attention, not least those relating to the governance of quality and performance (eg Dunleavy and Hood, 1994; Pollitt and Bouckaert, 1995; and in relation to healthcare: Scally & Donaldson, 1998; Ferlie and Shortell, 2001). Typically, empirical work in this area has been carried out through in-depth evaluations/appraisals of specific individual systems, thus allowing only tentative inferences to be made about the likely effectiveness of alternatives. Comparative studies on the other hand do exist, however those which compare a number of countries (for example, Burau and Vrangbaek, 2008) unavoidably lack the detailed assessment of nuanced frameworks (Clarke et al., 2007), developments over time (ibid), and analyses of "the meanings embodied in political activity" (Bevir et al., 2003:193). The specific, local manifestations of this latter feature are especially salient for understanding the governance of healthcare systems, and especially the reactions of healthcare professionals working within such policy frameworks (Gray and Harrison 2004; Bevan and Hood 2006a; Brown 2008). To this end, useful examples of more detailed (small-n) comparative work within the domain of healthcare also exist (eg Moran, 1999), though due to the publication date of this study Moran does not specifically address the more recent performance frameworks which explicitly focus on clinical quality.

The purpose of this paper is to develop understandings of what constitutes effective governance of quality in healthcare – both theoretically and empirically. This will be

undertaken through an in-depth comparison of quality and performance frameworks applied in the English and Tuscan public healthcare systems. Whilst the size of these two systems is quite different, there are a number of important similarities between the two systems which assist their comparability: both are publicly funded by the tax payer; both have been engulfed in particular concerns about their efficiency and effectiveness (Smith et al., 2001; Formez, 2007) within a wider circumspection of the public sector (Moran, 2003; Rapporto CEIS Sanità, 2008); both utilise gate-keepers as one means towards efficiency; and both have faced apparent crises of trust (Smith, 1998; Nuti and Vainieri, 2009). As a result of the above, and of more specific relevance for this study, both systems have embarked on policy ventures towards assuring the quality and performance of their healthcare provision – on a system-wide basis, at the level of local healthcare organisation (Primary Care Trust or Local Health Authorities), and indeed at that of the individual professional.

The format of a more typical comparative paper might consider data in directly relating and contrasting aspects of the two governance systems, as a means of coming to a conclusion as to one being more effective in some areas than the other and understanding why. This article however will follow a somewhat different approach – beginning instead with the assumption that the English system of quality development and assurance has been largely ineffective in achieving significant change in a wide number of areas. The first section will use the existing literature to develop an understanding of these limitations, whilst also noting areas of achievement. This more nuanced account is imperative, both in offering a more balanced and accurate description as well as drawing on examples of 'good practice' as a means of establishing the refinements necessary for effective governance.

The second section will discuss findings from research into the effectiveness of a different form of governance within the Tuscan healthcare system. If the English system can be generalised as operating through standards, directives and sanctions (at least as it is experienced by the professionals working within it), then the Tuscan alternative can be said to function around heightening the visibility of the work of local teams. Correspondingly an onus is placed on the reputation of the local organisations and individual professionals (Nuti, 2008) – not least their fiduciary role of acting in the best interests of patient care and public funding. A third 'discussion' section will then extrapolate from these findings a number of theoretical themes around individual behaviour, organisational functioning and social cohesion – applying these to develop a theorisation of effective governance in terms of legitimacy (Parsons, 1949), the

relational qualities inculcated (Black, 2008), and the corresponding feature of normative obligation (Elias, 1982). It is argued that the role of reputation in creating normative obligation (Brown, 2008; Nuti 2008) towards quality and performance – a ‘civilising process’ (Elias, 1982) – is more effectual than appealing to purposive-rational tendencies through stipulations and sanctions.

2.The limitations of quality frameworks in the English NHS: multiple distractions from 'quality' and learning

Notions of quality assurance are intrinsic to the very practice and refinement of medicine (Maxwell, 1984) and indeed were clearly visible within initial processes of professionalisation (Donabedian, 1978). Post-1997 health policy in the UK has made this quality imperative more explicit and indeed has sought to place quality and the development of effective performance at the very centre of NHS policy and organisational considerations (Department of Health, 1997; 1998; Scally and Donaldson, 1998). The lynchpin of this quality strategy is clinical governance – “a framework through which NHS organisations are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish” (Department of Health, 1999: 4).

Clinical governance essentially operates through the setting of standards and corresponding methods of verification to ensure these standards are met (Halligan and Donaldson, 2001). Thus the goals can be identified as National Service Frameworks (strategic long-term goals) and a vast array of protocols and guidelines as disseminated by the National Institute for Health and Clinical Excellence, the various Royal Colleges and other elite professional bodies. The ‘incentives’ within recent governance arrangements have been systems of monitoring and surveillance in accordance with performance frameworks. These are designed to ensure the meeting of standards and the following of procedures – working at the local organisational level as well as through external processes such as those enacted by the Healthcare Commission.

Prima facie the quest for quality in the NHS would appear to function through delegated autonomy, and yet such is the ‘comprehensive and systematic’ manner in which performance and other outcomes are monitored that many have characterised the developments as movements towards a ‘machine bureaucracy’ (Flynn, 2002:

168). Regardless of differences between the rhetoric of governance and its manifestations in praxis, there has been a general consensus that these quality frameworks have had a decidedly limited impact (Smith et al., 2001; Thomas, 2002; Degeling et al., 2004; Neale et al., 2007; Gask et al., 2008). Hence while many healthcare professionals are in accord with the general aim of pursuing quality (Shakeshaft, 2008), there are a number of attributes within and around clinical governance which limit its effect on professional action and therefore clinical performance.

One means of understanding these weaknesses is the multiple and conflicting priorities of governance systems. Quality is most usefully understood as a multi-dimensional concept (Maxwell, 1984) and indeed frameworks require professionals not only to serve many masters, but moreover to pay heed to some (most notably efficiency) more than others (Klein, 1998). Sheaff and Pilgrim (2006) argue that the efficiency concerns reinforced within purchaser-provider quasi-markets obstruct and distract from organisations' learning function, thus rendering quality (in its wider sense) compromised as a result. In this sense 'complexity and contradictory processes' (ibid.: 27) may well consume the attention and efforts of healthcare professionals in a Simonian sense (Simon, 1971), and thus act to undermine quality at its most fundamental – that of patient-centred care (Brown and Calnan, 2010). More specifically, the use of monitoring and surveillance may develop distracting and therefore problematic tendencies at three distinct levels: the extent of information produced (Degeling et al., 2004); the focus of what is being measured and moreover which measurements/targets are related to sanctions (Bevan and Hood, 2006a); the very nature of measurement itself (Brown, 2008).

These latter two aspects are inherently linked, in that some aspects of quality are by their very nature easier to quantify, and therefore monitor, than others (Kennedy, 2004). This variation in generalisability/visibility within the organisation, and moreover the politicisation of certain sub-facets of quality (such as waiting times), means that certain such components come to be disproportionately significant in considerations of quality (Brown and Calnan, 2010). Perverse incentives are likely to develop around these (Bevan and Hood, 2006a) given their bureaucratic importance. It is this innate juncture between quality which is bureaucratically significant (for the administrative 'system') and that which is clinically significant in a more holistic sense (within the interactive experiences of clinicians), which is at the heart of the limitations of the governance system. Approaches to governance have typically failed

to capture holistically, proportionately and therefore accurately what quality really represents to professionals (Degeling et al., 2004). This lack of synchronicity, and thus legitimacy, undermines their support and cooperation in the system.

It is vital at this stage to underline that clinical governance, as it has been applied in the English NHS, is far from wholly deficient. Whilst the analysis above has been set out as a means towards understanding the limitations of this governance, and its apparent lack of effectiveness in a generalised sense, it would be overly schematic to ignore areas (both geographical and within certain clinical specialisms) where significant enhancements in quality have been achieved. Arguably it is primary care where levels of professional cooperation (McDonald et al., 2009) and improvements in quality outcomes (Campbell et al., 2005) have been more visible. Although it must be recognised that these outcomes are understood within predominantly bio-medical paradigm and therefore can be criticised in terms of broader notions of what is holistic practice, this paradigm is nonetheless that which is most capable of developing consensus and support amongst the medical professionals whose cooperation is vital. Aside from the financial remuneration which is attached to Quality Outcomes Framework (QOF) in General Practice, the ways in which quality is assessed are highly intricate (135 separate indicators – 2007/8) and holistic (reflecting clinical and organisational priorities, patient experience and the provision of additional services). In this sense the monitoring and surveillance applied is capable of reflecting the complexities and multi-dimensionality of professional performance and therefore minimising the gap between bureaucratic significance and clinical significance as discussed above. Moreover whilst the extent of monitoring and recording is considerable, the office-based environment of General Practice is perhaps more conducive to allowing GPs to deal with the bureaucratic burden in a way which minimises its interference on the holistic practice of clinical interactions (Checkland et al., 2008).

General practice aside, there have also been a number of recent innovations within the governance of more acute healthcare service provision in the English NHS – often in response to many of the failings noted above. 'Star ratings' enacted a 'naming and shaming' (Bevan and Hood, 2006b: 419) approach which functioned alongside a threat of dismissal of the senior managers of poorly performing trusts, as well as the 'carrot' of autonomy for those achieving rated highly within the system. This framework was criticised for the extent to which a small number of relatively crude, performance-oriented indicators either neglected large elements of practice or elicited

gaming behaviour and dysfunctional outcomes (Bevan and Hood, 2006a).

If the star ratings approach – with its threats and rewards focused on administrators – can be understood as a hierarchical-bureaucratic approach to quality, then more recent ventures such as the 'Advancing Quality' initiative in North West England and the national Commissioning for Quality and Innovation (CQUIN) payment framework (Department of Health 2008) tend towards market-oriented payment-by-results format, as applied within the QOF example discussed above. CQUIN involves rewards which are agreed locally by services and their commissioners within the quasi-market of the purchaser-provider system. The relatively small financial rewards used within 'Advancing Quality' – and the initially successful impact of comparing trusts in a more nuanced, patient-focused way (Kmietowicz 2008) than enabled by Star Ratings – points towards the potential utility of social/reputational drivers as a method of enhancing and assuring quality.

3. The Tuscan experience: the Performance Evaluation System as a collaborative learning tool

In contrast to the English NHS, recent organisational tendencies within Tuscany's healthcare system reflect an emphasis placed on cooperation between the key actors in the system rather than on competition via systems of purchasers-providers. Following this trend, when considering how governance systems might be established to enhance quality it was seen as important to plan and develop a framework that could be shared and owned by the various health authorities themselves as well as the regional administration. Such a system needed to be transparent in terms of method and objectives and capable not only of monitoring the health authorities' capacity to maintain financial equilibrium, but also of pursuing the strategic objectives defined at the regional level. It was therefore vital to design a system which was capable of taking into account a range of different types of outcomes in order to be able to achieve the objectives of improving public health and well-being through facilitating overall improvements in the quality of services and their capacity to meet the specific needs of citizens.

Hence the quality framework, as instigated through Tuscany's Performance Evaluation System (PES), has continued to be characterised as an opportunity for understanding, growing and learning; as a tool which is useful not only for the regional administration, but also for the health authority management and senior clinicians at

the local level . In order to support the running of the health system as a whole, as well as its specific local components, a method of highlighting areas of excellence and of improving areas shown to be critical or weak (Jones, 2000) has become a key feature of PES. Through an agreed (as opposed to stipulated) identification of a set of indicators, PES has sought to start a 'best practice' enhancement process amongst the local healthcare institutions via a system of benchmarking (McNair and Leibfried, 1992).

The inauguration of PES in 2004 therefore saw the introduction of a multidimensional measurement system in order to assess and monitor the Health Authorities (HAs) of the Tuscany Region - consisting of 12 Local Health Authorities (LHAs) and 4 Teaching Hospitals (THs). PES, which has since become a fundamental basis of healthcare management in the region, consists of 50 measures, made up of more than 130 indicators overall, classified in six dimensions of assessment, including: population health; regional health strategies; quality; patient satisfaction; staff satisfaction; efficiency/financial performance. In order to simply and graphically represent the performance of each HA, a "target" chart with the six dimensions represented was designed, divided into five bands associated with different levels of performance. An indicator with a high score is displayed as close to the centre (dark green), and one with a low score is displayed as far from the centre (red).

The application of PES has been appraised as facilitating a number of improvements across the Tuscan healthcare system (Censis, 2008). Its utility suggests that targets can usefully change the behaviour of individuals and organisations if applied in the right manner (Bevan and Hood, 2006a) – vitally where there is a high level of congruence between what is bureaucratically significant and that which is clinically significant. That the benchmarking and advancement process associated with PES is based on local involvement and agreement, and moreover encourages local services to learn from the data (of their own outcomes as well as those of their colleagues) in understanding what 'good' or 'best' practice might look like, would seem to be contributing factors to the framework's success. After four years of PES being in operation, and in its running alongside a payment reward system for CEO's (of HAs), improvements were achieved in most of the indicators monitored (Nutti, 2009).

Although the use of monetary incentives would seem to signal the existence of a market-linked management of quality (as opposed to hierarchy and trust), the size of these financial rewards makes evident their relatively minor nature. Process evaluation of PES suggests that the greatest incentive is through authorities wanting

to improve their publicised performance in relation to other HAs, especially where these authorities are rated as very weak. In fact, every year the regional press publishes the HAs ranking with the CEOs names according to the level of the incentive rewarded, and each of them is quite worried to be in the worst places. Regular meetings of CEOs, where indicators are reviewed, allow for a sharing of good-practice and a peer-recognition of improvement. Moreover, that explanations for improvements are provided amongst the scrutinising of an audience of peer CEOs helps ward against gaming. These interactive means of checking are much more effective at illuminating gaming practice than the mere use of auditing methods (Bevan and Hood, 2006a).

Indicators that received more attention were those concerning quality and appropriateness. Most of them registered notable improvements – for example the percentage of hip fractures operated on within 2 days (figure 1). Across the region, the level of operations within 2 days in 2005 was 27%, with performance varying among HAs from 9% to 54%. By 2008, the level had increased to 44%, with a variation from 23% to 78% among the HAs.

Three Italian regions joined the Tuscan PES in 2008. Since most of the indicators monitored across the regions are the same, they also measure the percentage of hip fractures operated on within 2 days. The 2007-2008 trend shows that only Tuscany Region, the region that had included the indicator in its PES since 2005, significantly improved its performance while the other regions, which recently introduced PES, registered a stable performance as shown in figure 1.

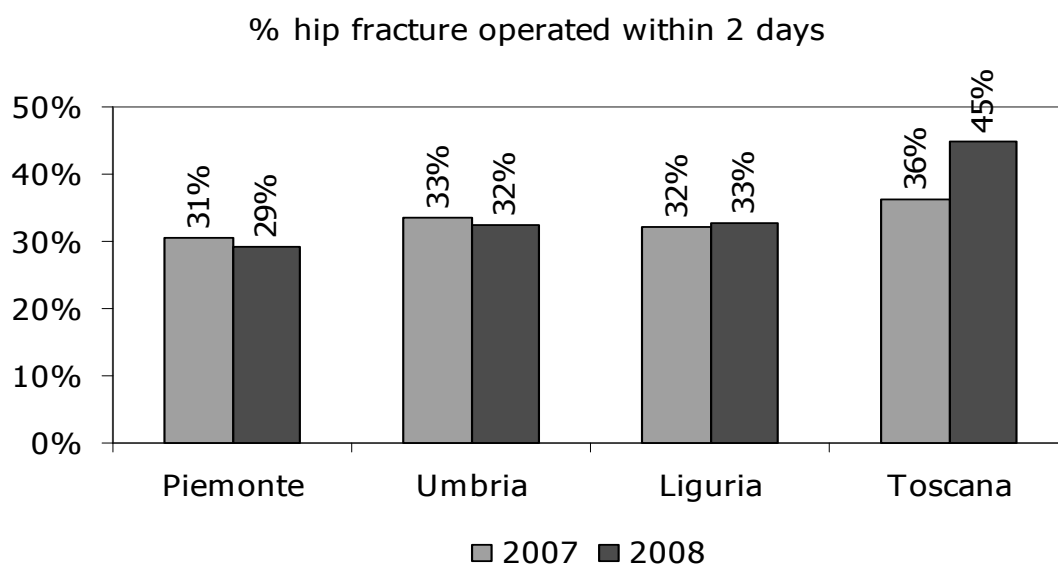


Figure 1 - Trend 2007-2008 of percentage of hip fracture operated within 2 days

across four Italian Regions.

Improvements were achieved in most of the indicators: over 50% of the 130 indicators registered improvements year-on-year. In analysing the functioning and utility of PES in more detail, at least five significant factors become apparent:

The first element to be considered is the participation of the clinical professionals and local managers within the wider process – the performance evaluation system was in fact designed and developed in close collaboration with healthcare professionals and managers (Abernethy and Stoelwinder, 1995; Jones and Dewing, 1997). It is important that all actors within the healthcare system – clinicians, local managers and regional administrators – participate and share their opinions in developing the evaluation indicators. This collaborative and inclusive basis is vital in order to avoid the risk that local managers may manipulate data, or that they will not use the performance evaluation system because they do not believe in the relevance and significance of the indicators proposed by the regional government.

The second point is that benchmarking helps local organisations to learn from others' experiences - overcoming the limitations of merely self-referential evaluations and driving improvement even in the absence of a marketised form of competition. The information produced within PES and represented uniformly has enabled an efficient and constructive comparison amongst the system's local health authorities (though the comparability of budget allocations remains problematic). This has made it possible to highlight the aspects where problems are of a regional nature, and those which derive from an individual authority's behaviour. For instance if a particular indicator shows a negative performance for all the local health authorities surveyed then this is clearly a general problem that requires attention at a regional level. When, instead, performance varies greatly between authorities, it becomes clear that some authorities could learn from others and that collaboration (via 'good practice' sharing) between them could help to overcome certain problematic issues of poor performance. In this way the means of assuring performance is intrinsically and closely tied to the vital role of local HAs as learning organisations, rather than the conflicting priorities which exist in many NHS contexts (Sheaff and Pilgrim, 2006).

The third factor is the strong emphasis on reputation. According to some authors (Mannion and Davies 2002; Hibbard et al., 2003; Hibbard et al. 2005), the key driver of changing performance in the health sector is the threat of reputational damage. The Tuscan experience suggests the utility of comparing performance amongst

individual HAs, but above all through highlighting and communicating the good results obtained by the 'best practice' examples. In harnessing this lever of reputation, the Tuscany Region decided not only to publish the levels of performance achieved but also to show how HAs improved their performance when these developments are more pronounced. Performance indicators are monitored every three months – being presented and discussed at individual meetings between the Regional Health Councillor and the CEOs of each LHA. Besides this, regular meetings take place with all the CEOs of HAs, and the most significant improvements are made apparent and managers are asked to provide evidence how their organisation achieved such advances. These meetings have become forums of knowledge development and dissemination, where successful approaches are able to be discussed, adopted and pioneered in other settings.

The fourth hallmark of the PES is transparency: i.e. that all data and results are available to citizens through a publicly accessible website and a report published annually. In this way citizens become involved in the accountability process as to how public resources are used to deliver value for patients/service-users. Whilst the extent to which citizens are willing and/or able to use this information may be contested should not simply be assumed (Entwistle et al., 1998), nonetheless the visibility and transparency of these data publications within the public sphere amplifies the reputation-based effect (and corresponding moral obligation) on the behaviour of LHAs and the system as a whole.

Finally, it is vital that the relative effectiveness of PES is not understood as a disembodied or a-political process. A coherent political long-termism, personified by certain innovative advocates (eg the Regional Health Councillor) has been vital to the 'change management' that has been enacted over a number of years. This political commitment is visible in the funding which sustains the 'learning organisation' aspects of quality development. In contrast to quality frameworks in the English NHS where the introduction of institutional apparatus has not been mirrored by substantive improvement/learning implementation on the ground (Freeman and Walshe, 2004; Sheaff and Pilgrim, 2006), ongoing training activities⁴ involving HA coordinators, senior- and middle-management have facilitated the development, diffusion, comprehension and refinement of PES. This input further stimulates ownership.

Given the features described, some limitations keep emerging:

the aspects that PES takes into account include, among others, efficiency and appropriateness, but still there is too little evidence as regards the outcomes. A

further effort is needed to identify and share outcome indicators. In order to achieve this goal and to make use of the best experiences already in place, the next step planned for 2010 is the constitution of a national panel of experts in this sector.

Regarding the balance of PES indicators, a weak point also lies in the fact that PES is much more focused on hospital activities rather than territorial services. This is due to the IT system that is less developed and more fragmented for primary care than for hospitals, thus causing lack of data and information.

However, the most important element which should be taken into account concerns the possible levers to be used when dealing with managers:

the Italian public administration, together with the healthcare system, is characterized by a great wait-and-see policy, therefore the mechanisms of intervention to dismiss unworthy managers or change their role are very limited. Moreover, while awarding for CEOs of Tuscan Health Authorities is equivalent to 20% of their salary, awarding for managers is really much lower. These elements, instead of enhancing changes and innovation, prevent them, thus clashing with the logic of evaluation and awarding that are part and parcel of PES.

4. Discussion: From purposive-rationality to fiduciary-obligation - via a social and 'civilising' process

Table 1 (below) briefly summarises some of the main characteristics of governance systems in Tuscany and England as discussed above. Given the peculiar caveat of QOF, and its relative success, this is discussed as a separate case to the more common format of quality governance in the NHS. The systems are briefly described under three of the key facets of governance legitimation which have emerged as salient in the analysis above: whether the system was imposed from the top-down or consulted from the bottom-up; the extent to which the indicators applied reflect the subtleties and holistic imperatives of clinical practice; and (as potentially influenced by both of the above) the extent to which the format, and the incentives applied, is compatible with (or enhanced by) professional norms and values.

Table 1 – summary of findings

Type of governance framework:	Prevailing quality framework in English	Quality and Outcomes Framework – English NHS	Performance Evaluation System - Tuscany
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		NHS		
Characteristics of the governance framework:	Enactment - as bottom-up (consent) or top-down?	Top-down	Top-down (remuneration may act to win over clinicians)	Bottom-up / consensus based
	Intricate and holistic indicators? congruence between bureaucratic and clinical significance	Varies and gradual refinement – but typically criticised as crude	Intricate and holistic (135 separate indicators – includes 'patient experience' and 'holistic care')	Intricate and holistic (130 indicators – across 6 dimensions of healthcare provision)
	Compatible with, and makes use of, norms and values?	Typical findings suggest problems in both senses	Financial incentives – but often compatible with holistic narrative	Uses reputation as a form of normative obligation

At the centre of the apparent success of both PES and QOF is their relative legitimacy amongst the professionals whose practice they seek to influence. All forms of governance and accountability mechanisms must be perceived as legitimate if they are to be effective (Black, 2008) and this might most simply be understood as - the behaviour which governance seeks to elicit being congruent with prevailing norms and values (Parsons, 1949). Or, as has been articulated above, where there is minimal distance between what is bureaucratically and clinically 'significant'. Whereas QOF (like PES), through its reflection of the complexities of clinical work and relative compatibility with narratives of holistic practice (Checkland et al., 2008), is thus able to achieve such legitimacy – the limitations of governance in many other areas of the NHS might be most effectively understood through a basic lack of ownership (Brown, 2008): governance fails to reflect quality in its more complete sense (as understood by professionals) and therefore the juncture, as referred to above, between bureaucratically significant quality and clinically significant quality undermines legitimacy.

More profoundly still, human conduct and social cohesion is not explainable merely via responses to threat of sanctions and/or rewards in an instrumental sense (Locke, 1960; Habermas, 1987). Rather non-contractual, normative and affective aspects are decisive in influencing individual behaviour and shaping organisational dynamics (Durkheim, 1984), and thus governance is always inherently relational (Black, 2008). Yet by appealing simply to purposive-rational action (of reaching targets and avoiding sanctions) and ignoring the relational, socialised basis of organisational order – and moreover clinical work – clinical governance often detaches compliance (with governance) from the norms, values and relations of meeting patient needs and driving professional morale (Brown, 2008). QOF can also be seen, in part, as appealing to purposive-rational interests in its payment-by-results format. Yet its multi-faceted and intricate approach to quality would nonetheless seem to facilitate a narrative of holism amongst GPs (Checkland, 2008) – ie instrumental and normative interests remain compatible (Brown 2008).

Where professionals see such divergences between the satisfying of bureaucratic stipulation and the moral value of their work, the former comes to be perceived as a-moral. Therefore no normative obligation exists towards cooperation, and ignorance or subversion of governance becomes likely (ibid). In this light it is apparent that effectual governance of healthcare work is that which is able to reflect the holistic, clinical interests of patients – as perceived by professionals – and therefore achieve legitimacy. Moreover the most effective and efficient systems will be those which account for, and ideally function through, relationships and normative obligation. For an ongoing monitoring and surveillance is not only ineffective, through only appealing to purposive-rational motives, but moreover is highly costly . The opportunity costs of healthcare professionals' time in complying with governance recording systems are also considerable (RCN, 2008).

The financial incentives attached to QOF may well have assisted the engagement and relative lack of resistance the framework has encountered. Yet the economic burden of the new General Medical Services contract on the NHS, of which QOF is a costly part, would seem to limit the transferability of this approach. Means of managing transactions which apply normative obligation through trust and cooperation as opposed to financial incentives or bureaucratic stipulation are cheaper (Arrow, 1974; Fukuyama, 1995) as well as more effective in managing and refining knowledge within learning organisations (Adler, 2001). Accordingly this final section will close by proposing that an effective and efficient governance system should be: professional-

led; based on cooperation rather than monitoring and sanctions; and one which facilitates the role of normative obligation in 'civilising' clinical work . These three components would help assure a high level of congruence between bureaucratic and clinical significance.

As already clarified, governance systems which are truly professional-led will be more likely to acquire legitimacy through the ongoing involvement (design, application and refinement) and corresponding ownership of the professionals over whom control is sought. Growing out of this, the role of professionals in developing and refining how quality and performance are assessed will ensure the system's accuracy in reflecting the subtleties of clinical practice and the wider, holistic patient experience. Rhetoric behind clinical governance in the UK pays lip-service to such 'grassroots' participation, but mere involvement is not sufficient (Degeling et al., 2004). Rather local professionals must participate in the design of how their practice is assessed and provide ongoing input in such a system to ensure continuing legitimacy (congruence between the bureaucratic and the clinical) and thus commitment.

It is partly in this sense that cooperation, rather than standards and sanctions, is a powerful mode of obligation because norms and values (within the social group) are a compelling force on human praxis which is driven by far more than purposive-rational interests. Systems based on this latter logic tend towards the de-moralisation of work in the sense of alienation and an undermining of control (Brown, 2008). In contrast systems rooted around the former are more effective at refining, sharing and applying expertise in knowledge intensive organisations such as medicine (Adler, 2001).

This advocating of governance formats which are professional-led and cooperative should not be mistaken as suggesting a return to the previous system which was noted to have failed in England in the late-1990s (Smith, 1998). The previous system functioned behind a shroud of relatively blind trust placed in the broader profession (Dixon-Woods, 2009), hence there was only limited effect of socialised, normative obligation in that a professional's value was attributed through group status as opposed to individual performance. By making individual or local-team work more visible through using outcomes data (as deemed appropriate by local stakeholders), the socialised influence of norms and values is made more potent and is effective on the individual clinician. The crucial contrast with the current system in England would be the absence of sanctions. Less than ideal performance would instead engage discussions as to how improvements could be reached and thus promote learning and cooperation rather than defensive practice and gaming. It is in this sense that the role

of the social (as opposed to the bureaucratic) in governing and civilising behaviour becomes apparent. The visibility of the self (or the team) in the public sphere, in terms of reputation, therefore generates ‘‘continuous reflection, foresight and calculation, self-control, precise and articulate regulation of one’s own effects’ (Elias, 1982: 271).

Although empirically grounded, this paper has been written more in the guise of a discussion piece. More substantive research is required to explore the themes raised here and in particular the various caveats and nuances (variations within services between effective and poor outcomes; differing relations with managers; cultures within specialties more or less conducive to quality foci; and so on) which undoubtedly exist across the English and Tuscan systems. The development of research designs and conceptual frameworks which are capable of comparing (quantitatively and qualitatively) the perceptions, behavioural changes, and longer-term outcomes across different approaches to healthcare governance are necessary. These might even be possible based on existing secondary data, as an alternative to new primary research. Based on the discussions above, it could also be contended that – given the centrality of prevailing norms and values to the successful legitimation of governance frameworks – there may be a degree of cultural specificity to the effectiveness of normative obligation (and governance more generally) within the contexts discussed (Bureau and Vrangbaek, 2008). The dominance of certain forms of habitus within specialisms (eg General Practice) or regions (eg Tuscany) may make forms of coping (McDonald, 2009) or cooperation more likely; thus emphasising the utility of further, socio-culturally sensitive, comparative research.

Endnotes

The population size of England is slightly over 50 million, whilst Tuscany’s is marginally below 3.5 million.

¹ Though a novel policy in its explicit centring round quality, clinical governance is best viewed not so much as a new, post-1997 creation but rather emerging out of several pre-existing trends. Some of these emerged within the new public management of the 1980s and 90s (Flynn 2002; Brown 2008).

¹ Indeed such has been the success of GPs in developing quality and meeting QOF targets that the remuneration of GPs, via points which are related to the indicators, has put considerable financial strain on the NHS. Whilst this is evidence of naivety in terms of economic planning, it can be considered further evidence of quality improvements.

¹ Not only is QOF a form of performance related pay, but it is also associated with a new GP contract which has led to improved working conditions (eg reductions in work outside office hours) (Whalley et al., 2008). This may also impact on the popularity of the new ‘system’ and corresponding legitimacy.

¹ The system was designed and carried out by the Health and Management Laboratory (Mes Lab) of the University Scuola Superiore Sant’Anna that works in the healthcare system as autonomous body in charge of management training and evaluating activities.

¹ Interestingly little data exists as to the precise costs of implementing quality frameworks across the NHS. It is likely though that these are significant and underestimated (Walshe et al., 2003).

¹ The use of the term *civilising* is applied not to suggest a current predominance of barbarism, but rather a process towards more modern and systematically enlightened practice of clinical work and organisation.

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CHAPTER 4 - Disinvestment for re-allocation: A process to identify priorities in healthcare⁶

Resource scarcity and increasing service demand lead health systems to cope with choices within constrained budgets. The aim of the paper is to describe the study carried out in the Tuscan Health System in Italy on how to set priorities in the disinvestment process for re-allocation.

The analysis was based on 2007 data benchmarking of the Tuscan Health System with an impact on the level of resources used. For each indicator, the first step was to estimate the gap between the performance of each Health Authority (HA) and the best performance or the regional average. The second step was to measure this gap in terms of financial value. The results of the analysis demonstrated that, at the regional level, 2–7% of the healthcare budget can be re-allocated if all the institutions achieve the regional average or the best practice.

The implications of this study can be useful for policy makers and the HA top management.

In the context of resource scarcity, it allows managers to identify the areas where the institutions can achieve a higher level of efficiency without negative effects on quality of care and instead re-allocate resources toward services with more value for patients.

Keywords: Health priorities; Benchmarking; Efficiency; Health resources

1. Introduction

Resource scarcity and increasing demand for services require health systems to cope with difficult choices within constrained budgets. A range of concerns, ranging from ethical principles such as “accountability for reasonableness” through to economic goals of increasing productivity argue for a thoughtful approach that targets reductions as opposed to across-the-board cuts.

The typical health system approach of deriving budgets based on historical spending or political pressures can lead to sub-optimal use of limited resources (Mitton and Donaldson 2004). Economic approaches can help decision makers by providing a systematic and explicit way to set evidence-based priorities (Mitton and Donaldson

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2003, Mitton et al. 2003a) even if they are not the sole consideration (Hauck et al.2004, Baltussen et al.2006) .

In the process of resource reallocation, different countries have followed varying approaches for setting priorities at national level (Ham 1997). Since 1970s many countries have adopted the Program budgeting and marginal analysis (PBMA) in the health sector (Hauck et al. 2004, Viney et al 1995). PBMA has been developed as an attempt to rationalize the incremental budgeting approach, based on applications of opportunity cost and marginal analysis (Mitton et al 2003b). PBMA can be deployed at the micro level (i.e. specific service areas or treatments) but also at the meso (Health Authorities) and the macro level (Regional Health Systems or National Health Systems) (Wilson and Scott 1995). Other budgeting and reallocation techniques have used Health Technology Assessment techniques to guide disinvestment decisions in ineffective treatments (e.g. guidance on disinvestment from NICE) (Elshaug et al.2008, Pearson and Littlejohns 2007).

This paper describes a study carried out in the Regional Health System of Tuscany, Italy. Using 2007 performance data, the study measures the impact that performance improvement could have on the amount of resources that Health Authorities (HAs) and the Regional Health System could save and re-allocate to other services. This exercise highlights the role that benchmarking best practices can play in disinvestment decisions. For this study, "disinvestment" in health care describes the processes of withdrawing health resources from existing health care practices, procedures, technologies or pharmaceuticals that are deemed to deliver little or no health gain relative to their cost, and thus, no efficient allocation of health resources. (Elshaug et al.2008). This means that disinvestment includes service reductions due to inappropriateness and savings achieved through better efficiency identified through benchmarking (e.g.. lower cost for the same output).

Performance benchmarking is a common improvement method in hospitals in Anglo-American countries. Despite the debate that has developed in UK National Health Service on how best practices were disseminated and used as models for emulation, benchmarking is still considered a highly desirable policy instrument (Northcott and Llewellyn 2005). Johnston (2004), in an OECD report suggests that benchmarking is useful for improving performance, particularly improvements in efficiency and that it may provide a valuable way of reconciling rising demands for health care with limits on public financing. In this sense benchmarking could be useful as a guide to disinvestment because it identifies where to free resources by improving performance

indicators with an impact on resource utilization.

2. Background

The use of benchmarking as a managerial tool may be very useful in the Italian health sector where there is the widespread belief that costs cannot be reduced (Di Frischia and Foschi 2007). This is especially true within the Health Authorities (HAs) that have typically not competed with each other or used inter-regional benchmarking to guide improvement efforts. During the evaluation of annual Regional budgets, Health Authorities typically argue that they cannot reduce their spending due to already constrained budgets and existing deficits. In fact, most of HAs Chief Executive Officers (CEOs) argue that the current capitation criterion is not linked to true population needs and that DRG rates are out-of-date, particularly for highly complexity cases. They typically argue that it is self-evident that they have achieved maximum efficiency. Without a systematic approach to evaluating the performance of each HA, there is no ability to respond to these claims from an evidence basis.

This situation has changed in the Tuscany Region, where the Region has introduced a multidimensional Performance Evaluation System (PES) to assess and monitor its 12 Local Health Authorities (LHAs) and 4 Teaching Hospitals (THs) (Nutti 2008a, Nutti et al. 2009). The PES is based on 50 measures, made up of 130 indicators, organized into six dimensions: Population health, Regional policy targets, Quality of care, Patient satisfaction, Staff satisfaction, and Efficiency and financial performance. Each measure is benchmarked and published to provide management, providers, and consumers the opportunity to compare the results across all organizations.

The majority part of indicators receive an evaluation on the basis of the international, national or regional standards available. When there is no standard the evaluation is given on the basis of the regional mean or median. The performance assessment is divided into five classes:

1. very good performance;
2. good performance
3. average performance
4. poor performance
5. very poor performance

Classes are identified on the basis of the standard, the mean or the median and the regional standard deviation for each indicator.

During the pilot phase of PES, regional and HA top managers proposed a list of

indicators, some of them already used in other countries (Pink et al 2001, CIHI 1999, Sutter Women's & Children's Services 2001). Clinical indicators were submitted and approved by the Region. All indicators were also reviewed a variety of consensus exercises including an annual consensus conferences involving HA and regional managers, professionals and consumers. The same process guides the inclusion of new indicators each year (Nutti 2008a). The PES is now a central part of governance at the regional and HA levels and is linked to CEOs' compensation.

In order to support regional and HAs management in quantifying the achievable level of efficiency if performance was at the highest observed (benchmark) level across all HAs, a research team presented the results reported here, that translate the performance improvements that the system could achieve if efficiency levels were the same as benchmark performers.

In 2007 and 2008 the overall performance (calculated as the percentage of PES indicators with good and very good performance minus the number of indicators with poor and very poor performance) is significantly and inversely correlated with the adjusted per-capita cost ($r=-0.70$ $p<0.05$ in 2007 and $r=-0.58$ $p<0.05$ in 2008). This finding, that quality and cost are inversely related, is consistent with the literature for some indicators. For example, reductions in length of stay have not led to increases in 30-day readmission rates or the volume of physician visits for patients (Harrison et al 2005). Likewise, shorter hospital stays have been associated with lower post discharge death rates (Brownell and Roos 1995).

3.Methodology

In line with other European health care performance reports (Johnston 2004), the Tuscan PES shows substantial variability of performance across HAs (Nutti 2008b). Based on these differences, the research team created an exploratory simulation based on 2007 performance data to quantify the amount of resources that could be saved.

Construction of the simulation followed four steps: 1. the identification of indicators to be analyzed, 2. the identification of the minimum and maximum improvement that can be required to achieve benchmark performance, 3. the calculation of gaps between the performance of each HA and the mean or best performance, 4 the translation of gaps into financial terms. An advisory panel composed of top managers from the Regional Department of Health and HAs provided advice throughout the construction and analysis of the simulation.

The first step was to select indicators. The advisory board validated the criteria of selection put forward by the research team and selected 11 indicators from the 130 PES indicator set.

Indicator selection was based on the following criteria:

- o Expected improvement in the indicator had to be linked to concrete and feasible actions through evidence in the literature or the consensus process or advisory board recommendations,
- o Indicators had to be expressed in Euros or easily translatable into Euros

The 11 indicators described performance in hospitals, primary care, pharmaceuticals, or on continuity and human resources management (see table 1). Among the 11 indicators, six are efficiency indicators: average length of stay (ALOS) for each medical DRGs, pre-surgical LOS for planned interventions, three primary care indicators and pharmaceutical expenses (mostly linked to off-label use). They all focus on the way resources have been used. Improvements on these indicators directly translate into potential savings.

For human resources management, the indicator on potential retirees shows the opportunities (in terms of number of employees) to reallocate resources among units/wards/services by reducing the number of personnel. Once this indicator has been translated in financial terms, it provides forward-looking statements of potential savings or re-allocations.

The absenteeism rate is an indirect indicator of the organizational climate. A high rate of absence means that employees are not satisfied with their working conditions (ie. the perception of equitable treatment) (Dittrich and Carrell 1979). When there is a high rate of absence, HAs are obliged to re-organize services with resulting extraordinary expenses.

The hospitalization rate over the regional median, provides an estimate of potential inappropriate care. This work builds off of work on both the use of small area variations in utilization management (Fisher et al. 2003a; 2003b). and ambulatory care sensitive conditions (Magan et al 2008). Reductions in inappropriate or avoidable hospitalizations should reduce costs and provide opportunities for disinvestment. Hospital stays longer than 30 days provide an indicator of continuity of care: a high value is a signal that primary and hospital care is not organized around patients. These long lengths of stay were considered partially avoidable.

The readmission rate within 30 days for similar conditions is an indicator of preventable hospitalizations (Sibbritt 1995): HA that provided appropriate treatment

and discharge planning should have a lower rate of readmission.

Table 1. List of selected indicators.

N Indicators:	Intervention regarding:
1 General Practitioners expenses	Primary Care
2 Paediatrics expenses	
3 Other services expenses	
4 Pharmaceutical expenses	Pharmaceuticals
5 Hosp.rate potentially inappropriate	Hospital
6 Average length of stay for Medical DRGs	
7 Pre-surgical length of stay	
8 Readmission within 30 days	
9 % Hospitalization > 30days	Continuity
10 Potential retirees	Human Resources Management
11 Absenteeism rate	

The second step was to point out, for each indicator, the minimum and the maximum level of improvement that can be expected from HAs. The two hypotheses were:

- Hypothesis 1 (Minimum improvement): changes to be obtained if all HAs with a poor and very poor performance reached the mean or minimum standard.
- Hypothesis 2 (Maximum improvement): changes to be obtained if all HAs could reach the regional target or regional benchmark.

Table 2 shows the two exceptions to above hypotheses: the minimum and maximum improvement are equal for the hospitalization rate and the ALOS indicators. The median hospitalization rate , was chosen as the benchmark during the consensus indicator selection exercise because an hospitalization rate below the median could be seen as an indicator of poor access. Likewise, for the ALOS indicator the consensus exercise suggested that a conservative approach keeping the benchmark and the minimum effort equivalent because of limits on case mix adjustment around ALOS. This is a conservative approach given that different authors have used more aggressive approaches. (Brownell and Roos 1995, Borghans et al. 2008, Hanning 2007).

Table 2 – The criteria applied for each indicators in the two hypotheses

N.	Interventions	Hypothesis 1	Hypothesis 2
1	General Practitioners expenses		
2	Paediatrics expenses	Regional Mean	Regional best performance
3	Other services expenses		
4	Pharmaceutical expenses		
5	Hosp.rate potentially inappropriate	Regional median	Regional median
6	Average length of stay for Medical DRGs	Regional Mean Per DRGs	Regional Mean Per DRGs
7	Pre-surgical length of stay	Regional Mean	Regional target
8	Readmission within 30 days	Regional Mean	Regional best performance
9	% Hospitalization > 30days	Regional Mean	Regional target
10	Potential retirees	Over 65 years	Over 60 years
11	Absenteeism rate	Regional Mean	Regional best performance

The third step was to estimate the gap between each HA's real performance and the performance required by the two hypotheses. This was done by taking the difference between the identified target for improvement and each HAs adjusted observed performance from 2007.

The final step was to determine the potential financial difference under each hypothesis. The appropriate method for translating measures into costs has been widely and critically discussed (Horngren et al 1997, Negri-Clementi 1988, Coda 1968, Cinquini 2003, Wiseman et al 2003). One third of indicators selected were already valued in financial terms but where the indicators were not valued in financial terms, three different methods to attribute costs were applied (see Table 3):

- The average wage that would be eliminated (potential retirees)
- The total personnel costs that would be avoided (the absenteeism rate)
- The total excess volume of DRGs (Inappropriate hospitalization rates)
- The total direct costs linked to the excess use of beds (ALOS and readmission rates)

Table 3 – Method of valuation applied to each indicator

N	Interventions	Method of valorization
1	General Practitioners expenses	
2	Paediatrics expenses	Already expressed in costs
3	Other services expenses	
4	Pharmaceutical expenses	
5	Hosp.rate potentially inappropriate	DRGs fares
6	Average length of stay for Medical DRGs	
7	Pre-surgical length of stay	Use of direct costs linked to the number of beds that can be re-allocated
8	Readmission within 30 days	
9	% Hospitalization > 30days	
10	Potential retirees	N.potential retirees * Average wage
11	Absenteeism rate	Abstenteeism rate * Total personnel costs

In each case, direct avoidable costs related to the number of hospital beds derives from the number of avoidable inpatient bed days. The amount of resources saved depends on the number of beds and on the basis of the type of intervention that can be planned based on three scenarios:

1. If the number of beds is lower than 12 , only some variable costs (laundry, food, pharmaceuticals, etc.) are avoidable. In this case, the financial value associated with each inpatient bed day is a fixed amount of 40 € for all HAs.
2. If the number of beds is some multiple of 12 (a typical ward), reorganization of personnel is possible, with a consequent additional reduction in costs. In a short period of time the opportunity to move personnel to other services, including community-based care, appears to be feasible especially for nurses, while over longer periods of time it may be possible to move physicians.
3. If the number of beds is some multiple of 30 (a typical floor), structural interventions such as reduction in bed numbers are also possible with a reduction of both costs related to care and fixed or overhead costs such as maintenance and amortization costs. All of these calculations were based on 2007 costs.

The results from this exploratory study were reported to all top HA and regional managers and then reviewed as part of management training courses for the this management group. Notably, this review did not identify any exceptional

circumstances or problems that would argue against the potential savings.

4. Results

Table 4 below shows that at the regional level, from 2 to 7% of the 2007 6.1 million Euros healthcare budget could be re-allocated if all the institutions achieve the regional average or the best practice. These estimates are derived from the sum of all the inefficiencies in the 11 indicators analysed, considering the two hypotheses.

Table 4 - Regional amount of resources to be re-allocated in the two hypotheses

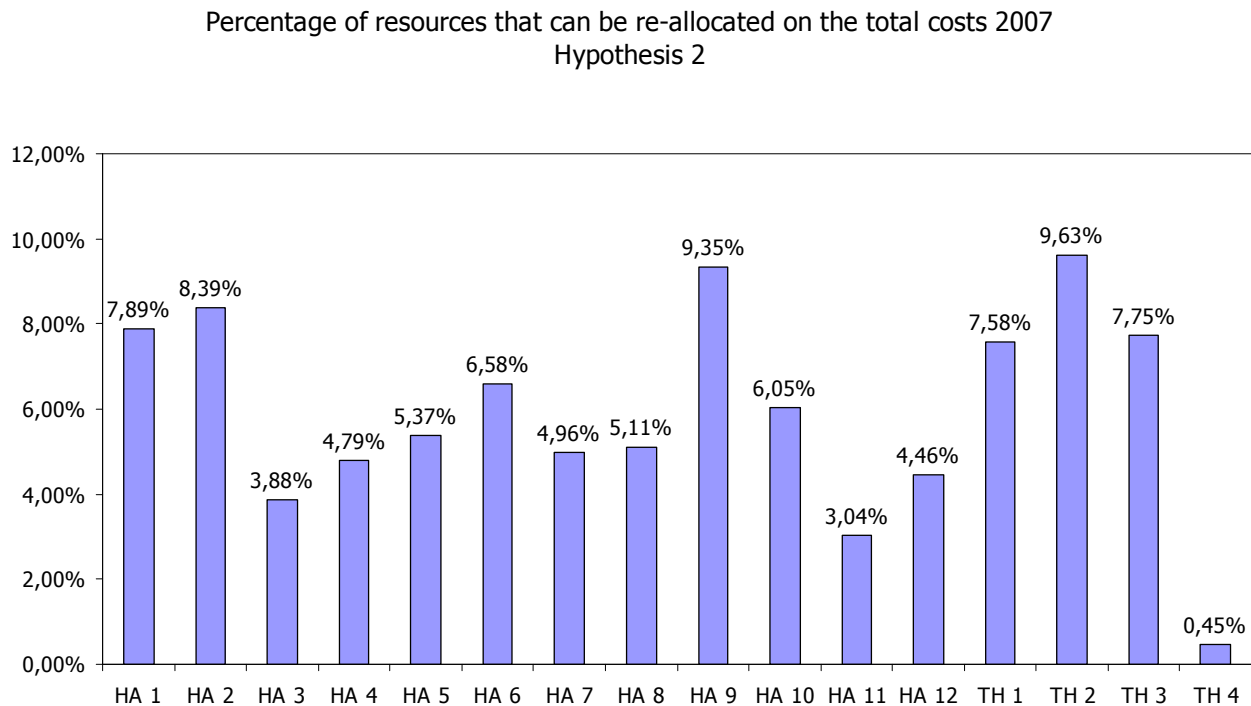
N	Interventions	Areas	Hypotesis 1		Hypotesis2	
1	General Practitioners expenses		€	4.415.057	€	19.882.497
2	Paediatrics expenses	Primary Care	€	2.695.250	€	9.045.799
3	Other services expenses		€	9.852.081	€	35.685.081
4	Pharmaceutical expenses	Pharmaceutical expenses	€	19.506.522	€	137.932.174
5	Hosp.rate potentially inappropriate		€	7.185.468	€	11.294.459
6	Average length of stay for Medical DRGs	Hospital Efficiency	€	59.844.704	€	59.844.704
7	Pre-surgical length of stay		€	11.658.164	€	53.369.217
8	Readmission within 30 days	Continuity of care	€	340.477	€	6.714.571
9	% Hospitalization > 30days		€	486.397	€	536.404
10	Potential retirees	Human Resources	€	6.036.021	€	60.113.119
11	Absenteeism rate	Management	€	6.442.001	€	34.162.281
Total			€	128.462.142	€	428.580.305
<i>% on the regional annual budget</i>						
<i>6.100 million of euro</i>				<i>2,11%</i>		<i>7,03%</i>

It is important to emphasize that not all of these savings would be monetized immediately. Some would need to be realized over a longer period of time and some would be reallocated to other services in order to realize the improved performance. In fact, some actions such as those regarding the continuity of care require cooperation of physicians, hospital staff, and institutions in different places.

At local level, large variation in the amount of potential savings in 2007, suggest that some HAs were already efficient but others had large room for improvement. For example, figure 1 shows that under hypothesis 2 (maximum improvement), HAs could

re-allocate between 1% to more than 9% of spending.

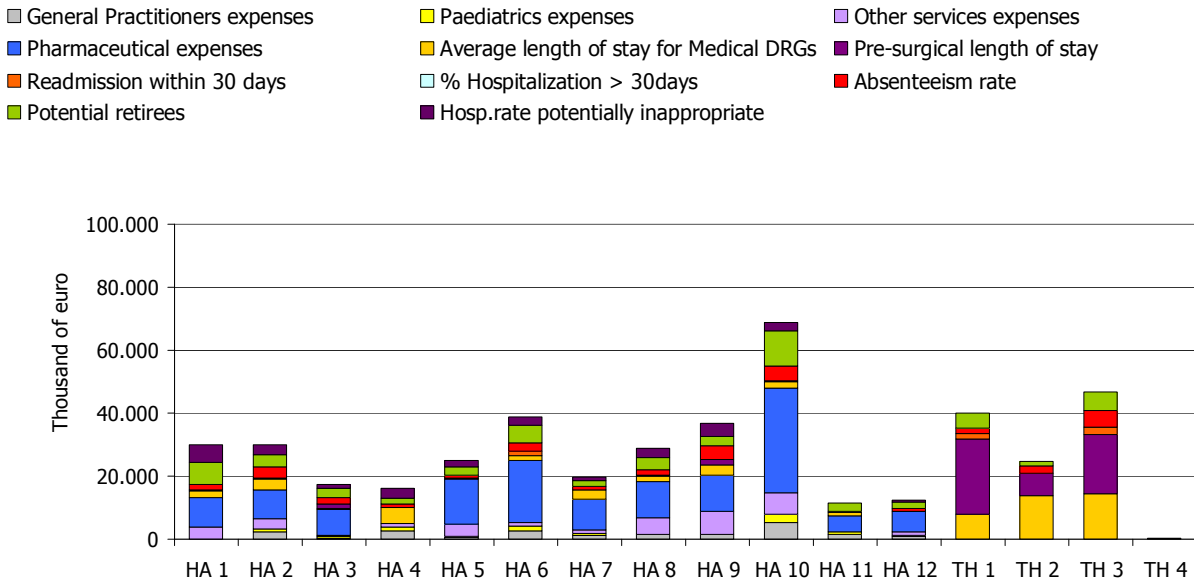
Fig. 1 - Percentage of resources that could be re-allocated on the 2007 budget by each HA - Hypothesis 2



An interesting finding from this simulation is that it could provide a way of setting priorities among interventions. Each HA can now distinguish areas where interventions are possible and there is room for improvement. The mix of potential savings coming from interventions is different from one HA to another, depending on local strengths. Figure 2 shows the resources to be re-allocated by HAs for each type of intervention, if all HAs reached the hypothesis 2 (benchmark) standard. For instance, it appears that TH 1 should concentrate its effort on the average pre-surgical length of stay; its major inefficiency with a potential pay-off of more than 38,000 bed days, equal to 105 hospital beds or 21 million Euros.

Fig. 2 - Resources to be re-allocated by HA for each interventions – Hypothesis 2

Hypothesis 2



5. Limitations and further developments

There are a number of limits on the results, most notably, limits resulting from the use of means and benchmarks as guides to achievable benchmarks and problems with overlap and attribution of savings to specific interventions. This means that the results presented here may be optimistic estimates of possible savings. In some cases, best performance (Hypothesis 2) is defined on the basis of the best performer instead of a national or regional target. This could lead to some problems such as the under-spending (that could occur, for instance, to the pharmaceutical expenses indicator without maintaining or improving quality) or data manipulation. These sorts of problems are likely only amenable to more detailed study or audit.

There is also a problem of overlap across indicators: for example, the reducing 30 day readmissions also reduces the overall hospitalization rate. In this case the total amount of resources that could be disinvested is less than the sum of those savings attributable to readmission and overall hospitalization rate reductions. Despite the risk of counting the same savings multiple times, the total amount was used because of its power to support identification of priorities across actions. In addition, the actions monitored in the study concern only 11 indicators; so even if there is an overestimation, it may be offset by the small number of indicators involved in this exploratory study. This means that an extension of the same methodology may produce new opportunities for savings. Thus, the amount of resources available for reallocation is likely higher than the totals reported under either hypothesis. Further

research could focus on the collection of more diverse and detailed financial information to extend the analysis also to other performance indicators.

Other limitations could be addressed to the method used to apply financial value: for instance there could be an over/under estimation linked to the methods applied to human resources management indicators: in these cases the real effect depends upon the type of personnel that is absent or retired; for physicians there would be an underestimation, for administrative personnel there would be an overestimation.

Another limit of the study could be the impact of the heterogeneity on performance variability. Some indicators are already adjusted for age and sex but other elements could impact on variability. It is authors' opinion that the large variability showed in the results are much more due to organizational factors than to other socio-geographical aspects.

Further research should work to explore ways of reducing the limitations on the study and on improving the practical guidance that can be given to managers pursuing the savings targets. Once managers of the public health system are aware of the resources they can re-allocate and what actions they can pursue, the next step will be to identify the targets for reallocation, that is, the services that represent a much higher return in benefits to the population's health. Experience in a number of jurisdictions suggest that re-investment decisions should be made in as transparent and evidence-based fashion as possible and with the involvement of a wide set of stakeholders (Elshaug et al 2008, Wiseman et al 2003, Levin et al 2007).

6. Conclusions

This benchmarking process changed the traditional pattern of complaints around the budgeting and resource allocation processes in Tuscany. The results of this study were shown to all CEOs in a meeting with the Regional leadership. It worked as a warning to all CEOs who argued that their HA had reached the maximum level of efficiency and that they needed more money to achieve required performance improvements. This study has also had a significant impact on the use of the performance evaluation system itself. Managers are now more aware of the value of benchmarking, not only to comprehend how their organization performs, but also to support the identification of priority intervention areas to improve efficiency. Some HAs even used the results as a starting point for planning organizational changes in their institutions. In this context it has become difficult for HAs that show large room for improvement to argue that they don't have enough resources to achieve financial balance and that they

needed a budgetary increase. This evidence has enabled the Tuscany Region to demolish pretexts, eliminating the word “impossible” and building a new culture around the “possible.”

However, the types of disinvestments suggested in this paper are not necessarily easy. They may force managers to deal with professional behaviour change in order to achieve the savings. Publication and distribution of data benchmarking, within and outside the organizations, represents a means for managers (Hibbard et al 2003) to make the case for resource reallocation to improve performance. Likewise, the implications of this study may be extremely useful for both policy makers and the top management of HAs in a public system that bases its action on cooperation more than competition. Benchmarking helps to identify best practices and subsequently allows measurement of the resources that can be disinvested and re-allocated in the medium and long term. It will be important though to develop capacity for sharing and learning from best practices. Although there are some differences with the methods previously described, the NHS Institute for Innovation and Improvement has adopted a similar approach to measure in financial terms the possible improvements of some indicators using benchmarking available online (<http://www.productivity.nhs.uk/>).

In some cases, a single intervention could free millions of Euros that can be re-allocated for other services maximizing value for citizens through Cost Benefit Analysis or Cost Effectiveness Analysis largely used for enhancing efficiency in a variety of settings (Murray et al. 2000). Even if this analysis is only the first step in the process of resource re-allocation, it has enabled HAs and Tuscany Region to identify those resources that could be moved without reducing the quality of services.

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