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Franci, A, Renzi, P and Gandy, RJ

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Paper for *British Journal of Health Care Management*

Evaluating Health Performance and Inequalities in Marche region of Italy

Authors Details

   Alberto Franci, Ph.D.

   Full Professor of Social Statistics

   Centro Studi Organizzazioni Socio Sanitarie

   Faculty of Sociology, University of Urbino "Carlo Bo"

   Piazza della Repubblica 2 – 61029 Urbino (Italy)

   Tel/Fax: ++39 0722 328624

   Email: alberto.franci@uniurb.it

   Also:

   Professor of Statistics, Management Engineering

   University of Studies of the Republic of San Marino

   47890 Republic of San Marino

   Pietro Renzi, Ph.D.

   Professor

   University of the Republic of San Marino

   47890 Republic of San Marino

   Tel/Fax: ++39 5118 889450

   Email: pietro@unirsm.sm

   Rob Gandy, Ph.D.

   Visiting Professor

   Liverpool Business School, Liverpool John Moores University

   Redmonds Building, Brownlow Hill, Liverpool, Merseyside L3 5UG, UK

   Home address: 13, Woodkind Hey, Spital, Wirral CH63 9JY, UK

   Tel/Fax: ++44(0)151 334 9248

   Email: rob.gandy@ntlworld.com

Corresponding Author:

Pietro Renzi, Ph.D.

Professor

University of the Republic of San Marino

47890 Republic of San Marino

Tel/Fax: ++39 5118 889450

Email: pietro@unirsm.sm

Abstract

A worldwide selection of models for measuring performance in health services was appraised, with the internationally recognised Health System Performance Assessment tool chosen for testing in a local health authority in the Marche Region of Italy, utilising local, regional, national and international comparisons. A complementary means of measuring health inequality involving the Concentration Index enabled a holistic evaluation of the local health environment. Whilst the approach addressed a comprehensive range of issues, limitations with data availability were found to present genuine constraints that require future action. Nevertheless, valuable lessons were learned for policy makers, with the relationship between socio-economic inequalities and systematic variations in health indicators highlighted. The Health System Performance Assessment tool presents the opportunity for strategic alignment in performance measurement. This article presents an overview of extensive piece of research.

Key Phrases

1. The Health System Performance Assessment tool was chosen from a worldwide range of models for testing in a local health authority in the Marche Region of Italy

2. The complementary use of the Concentration Index tomeasure health inequality enabled a holistic evaluation of the local health environment

3. Whilst the model addresses a comprehensive range of issues, limitations with data availability were found to present genuine constraints that require future action

4. There is a relationship between socio-economic inequalities and systematic variations in health indicators, which were highlighted by the results

5. The research identified valuable lessons for policy makers

6. Local, regional, national and international benchmarks were used, but cross-country comparisons can involve new risks if there are weak analytical frameworks, poorly validated measures or biased policy interpretations

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Introduction

Performance measurement of health authorities enables links between inputs, outputs and outcomes in a manner that should facilitate quality improvement. Indeed, information about performance is essential to ensuring health systems can support health improvements in their populations. It serves many different purposes: promotion of transparency and accountability; determination of appropriate treatments; facilitation of patient choice; and managerial control. But it is by benchmarking local data

against those of comparable organisations and systems that policy makers can establish whether performance is optimal, and if service redesign is necessary.

International literature suggests the importance of benchmarking different health systems, so as to avoid self-referentiality and enable learning processes of best practice. However, Smith and Papanicolas (2013) highlighted that the growing appetite for cross-country performance benchmarking by policy makers, citizens and media can give rise to new risks. This is because comparisons that rely on weak analytical frameworks, poorly validated measures or biased policy interpretations, may lead to seriously adverse policy consequences.

 provides an overview of research undertaken to determine a range of models/frameworks that evaluate health service performance, and establish the best to apply in practice; the chosen model then being applied for a specific location to see how it might inform local policy.The first part reviews and examines widely-used international frameworks and applies one to a Local Health Authority of the Marche Region in Italy. The second part outlines how healthcare inequalities can be evaluated in the Marche Region, with particular attention to statistical methods and measurements.

Performance Model

The first objective of the research was to describe the main instruments used to measure performance in health services from around the world, and then determine the most appropriate to use, by evaluating how they can support policy makers to provide transparency and accountability, in accordance with the Tallinn Charter (World Health Organisation (WHO), 2008). Table 1 compares ten such instruments, including two established local Italian models, against 20 dimensions/performance measures. It is seen that the number of dimensions each model involves ranges from 3 to 20, with the Évaluation Globale et Intégrée de la Performance des Systèmes de Santé (EGIPSS) model (Sicotte et al, 1998) covering all of them. The Health System Performance Assessment (HSPA) tool (WHO, 2012) (see Figure 1) has ten dimensions, and derives from Parsons' theory (Vrijens et al, 2016) and EGIPSS. It links health conditions, with both health system and health promotion characteristics, and non-medical determinants of health.

The HSPA was chosen as the preferred model to assess the performance of the Local Health Authority in the Marche Region. In summary, the reasons for this choice were:

Its coverage and the clarity of the key messages that emerge from its application.

The model is anchored to Parsons' theory and shows points of confluence with the EGIPSS model; therefore, it has a solid theoretical basis and can describe performance in all its multidimensional, paradoxical and contingent aspects.

The objectives of its various dimensions are consistent with each other and support a corporate approach. They can actively influence performance by: highlighting the effectiveness of actions taken; motivating staff towards the achievement of common goals; stimulating effective collaboration between the various professional figures involved in care processes; activating and improving information systems; and enabling results to be monitored over time. Critically, they facilitate the analysis of inequalities within the targeted population.

 [INSERT TABLE 1]

[INSERT FIGURE 1]

Data to populate the model were derived from the following sources: *Health for all* provided from WHO (2018); the European Union (Eurostat, 2019); the Organisation for Economic Co-operation and Development (2017); the Italian National Institute of Statistics (ISTAT), which is the main producer of official statistics in Italy, provided national mortality, life-expectancy and cause of death statistics; a Ministerial programme called 'Passi' (2018) and 'Passi d'Argento' (2018); sentinel events using physician databases; hospital discharge forms; CENSIS (2018) databases; and databases of the Local Health Authority investigated.

The HSPA contains 74 indicators. Therefore, for reasons of space, an example relating to only one of the indicators, viz. 'Indicators of Health Conditions', is shown in Table 2. It is seen that comparative data is shown for the Local Health Authority (Pesaro-Urbino (PU)), the local region (Marche), Italy as a whole, and the EU-15 (those countries that were members of the European Union prior to 1st May 2004). Belgium was also included as a specific comparator given the prior use of the HSPA model in that country (Meeus, 2014; Vlayen et al, 2010; Vrijens et al, 2014; Vrijens et al, 2016). Data for Marche and Italy was for 2017, but that for Belgium and the EU-15 was largely for 2015 (primarily due to delays in the publication of international data). The nature of the comparisons between PU & Marche, Marche & Italy, Italy & Belgium, and Italy & EU-15 are highlighted using five pictograms, ranging from red (very bad) to dark green (very good) on a broad traffic light basis. An amber triangle with the letter 'R' is shown where more data, more research or targets are needed before an evaluation can be performed. (The full set of results is available at: www.XXXXXXXX)

[INSERT TABLE 2]

Evaluation

Contemporary environment in Italy and in the Marche Region

Before considering the results it is essential to have an appreciation of the social and health profile of the Marche Region and Italy as a whole. Set out below are key points:

- Italy has the second oldest population in the world: 168.7 elderly (65+ years)for every 100 young people (18 years & under) (ISTAT, 2018);

- An estimated that 1,619,000 families live in conditions of absolute poverty (ISTAT, 2016);

- The incidence of absolute poverty (in 2015) rises to 26.8% from 18.3% among families with three or more young children (ISTAT, 2016);

- More than 6 million Italians (12%) give up on healthcare treatment for economic reasons (ISTAT, 2018)

- The percentage of GDP spent on health services is 6.7% (Aru et al, 2018);

- More than 180,000 (13.2%) of population of Marche Region give up on healthcare treatment for economic reasons (ISTAT, 2018)

Main findings

It was only possible to analyse 46 of the HSPA indicators for Pesaro-Urbino because of a lack of data. Such a situation is illustrative of that which will apply for many locations, and serves to highlight that data can be scarce, and that plans need to be put in place for the creation and collection of missing data that is deemed essential for in the future. The main findings for Pesaro-Urbino, from the available data, were as follows:

For *Health Conditions* patients' point of view showed a positive balance, with the majority of the population (95%) indicating a good self-perception of health conditions; higher than the Marche and EU-15 average.

For *Accessibility of Care* there were a number of concerns, despite there being universal insurance coverage and social safety nets. The main one was a high level of out-of-pocket expenses. Also, preventive measures showed quite divergent results: they were good and stable for breast and

cervical cancer screening coverage, but there were low vaccination ratesfor children, and for influenza in the elderly.

Quality was studied through five sub-dimensions, but these were where data gaps were very prevalent. For those indicators which could be investigated, the most significant results were low rates of mammograms for women aged 40-49 years; with mixed results for 5-years survival rates for breast, cervix, and colon cancer.

For *Efficiency*, Pesaro-Urbino's health system showed a high use of low-cost medication and shorter lengths of stay, but the percentage of one-day surgical admissions was much lower than Belgium.

In respect of *Sustainability* there was a high level of ageing GPs and a low use of an electronic medical file by GPs. The total health expenditure as a percentage of GDP was low.

Health promotion was mostly approached by conventional health and lifestyle indicators, complemented with some related to health policies, healthy settings, and individual skills. The majority showed good rates, if compared with those of Marche Region. Some problems arise in respect of alcohol consumption, and fruits and vegetables consumption was far lower than daily needs. One positive aspect was a low rate of obesity compared to the Marche Region.

Inequalities

Definition of health inequalities

Health inequalities are the *'systematic differences in the health of people occupying unequal position in society'* (Graham, 2009). They encompass income, social class, deprivation, caste, ethnicity and geography. There is consistent evidence throughout the world that people at a socio-economic disadvantage suffer a heavier burden of illness and have higher mortality rates then their better off counterparts. Addressing socio-economic inequalities should be a major focus for health policy, not only because most of these inequalities can be considered unfair, but also because a reduced burden of health problems in disadvantaged groups offers great potential for improving the overall health of the population.

To make progress in respect of socio-economic inequalities, it is important to monitor them, and try and keep them under control (Milanovic, 2017). Therefore their measurement requires firstly clarification of the different social groups, and secondly the quantification of inequality in the health

indicator by using synthetic measures.The construction of the latter measure involved two approaches:

1. Attributing socio-economic status through level of education, based on the standard classification used by ISTAT;

2. Quantifying the extent of inequalities through a synthesis of socio-economic status values in the inequality index.

From the results for Marche Region, following the first approach, it was readily noted that the level of education influenced general health conditions, accessibility to care, appropriateness of care and health promotion. A correlation between levels of education and health inequalities was also evident at regional level.

Concentration Index (CI)

The Concentration Curve has become the workhorse in most economic and statistical health studies. Several papers have been published proposing a welfare economic foundation for its use (O'Donnell et al, 2008; Van Doorslaer, Koolman, Jones, 2004; Bleichrodt and Van Doorslaer, 2006) or advocate an alternative approach (Zheng, 2006).Some authors propose to use Lorenz Curves(Illsley and Le Grand, 1987) but most health economic studies work with the Concentration Curve. This research followed the literature proposed by Bleichrodt and Van Doorslaer, which characterized the CI, in what they called the *'principle of income-related health transfer'*. The CI is directly related to the Concentration Curves and quantifies the degree of socio-economic-related inequality in a health variable (Kakwani, Wagstaff, van Doorslaer, 1997). According to O'Donnellet al (2008) only the CI is able to measure the association between socio-economic and health inequalities. Table 2 shows the Concentration Curves for Marche Region relating to the five years where there was a statistical significance in the results of 95% or higher. This confirms results found in the literature (O'Donnell et al, 2008; Balaj et al, 2017; Charonis et al, 2017); in particular, it can be asserted that the perceived good and very good health in Marche Region tends to be concentrated amongst those who have higher socio-economic status. Moreover, it is seen that the CI, although always positive, fluctuated over the years.

[INSERT FIGURE 2]

Main Findings

The CI calculated for the Marche Region was relatively stable for the analyzed period; it reflected inequalities, with the general perception being that wealthy people have better health. Therefore tackling health inequalities remains an important issue. The evidence presented in the Marmot Review (2010) and in other evidence-based analyses of health inequalities, suggests that Marche Region has a clear social gradient in health outcomes, which is closely related to social and economic factors. For this reason, local politicians and relevant workforces have an important role in reducing health inequalities through actions on the social determinants of health.

Recommendations to policy makers

The main strategic objective of a health system performance assessment tool is to support policy makers. It provides them with important information that helps guide their decisions. These may include new, corrective actions, and new reforms, both at regional and at local level. Examples from Marche include: recommendations/decisions concerning the maintenance and closure of some health services; and the recruitment of new specialised staff in certain sectors. The main output of the research consisted of: policy recommendations; policy formulations (proposals of solutions); decision-making (choice of solutions); policy implementation (putting solutions into practice); and policy evaluation (monitoring the results).

The results showed some warning signs which should alert policy makers:

Accessibility: out-of-pocket payments impact.

Patient centeredness: 35% of patients were not satisfied with the care received. Furthermore, indicators for overweight and obesity in adults (BMI>30), binge drinking, daily physical activity, consumption of fruits and vegetables, coverage of cancer screening (mammography), influenza vaccinations for the elderly, and vaccinations against rubella and measles all had worrying values.

More national and regional targets are needed: because benchmarking against other European countries does not necessarily provide answers. Indeed, international comparisons of performance is still a debatable issue, because there can be many methodological pitfalls and contextual variations which make meaningful comparisons difficult.

Health information systems need improvements: especially in respect of availability and timeliness of data. Policy makers should not be basing their decisions on outdated information.

Conclusions

Like most other countries with publicly funded health care, Italy has a process for assessing the overall performance of the health system. Unfortunately, the various instruments for measuring performance have evolved over time, and are often not strategically aligned with each other. Therefore, they do not necessarily reflect the current direction and vision of national and regional health policies. For this reason, the authors recommend the HSPA framework as a positive way forward, because it is a set of linked performance indicators that may be applied within the system as well to the system as a whole. The overall goal of the HSPA is to support the health system in addressing accessibility, efficiency, equity, quality, sustainability and safety of health services. Applied to a Local Health Authority within the Marche Region, by means of 46 indicators, it provided a broad picture of the health system investigated; together with warning signals in respect to the status of the health system. Measuring health inequality using the CI revealed that revenue inequalities were the most important predictor of health inequalities. The presence of socio-economic inequalities can be reflected in systematic variations in health indicators, with the most favoured social groups having advantages in respect of health.This approach of utilising the HSPA and the CI to complement each other is commended to provide a holistic evaluation of health in given locations.

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