

Unfair Inequalities in Health Care: A Critical Appraisal under a Multifarious Approach

Estela Barbosa Capelas

*Department of Health Sciences
University Nove de Julho – UNINOVE, São Paulo, Brazil
E-mail: jc.isprm@gmail.com*

Antônio Pires Barbosa

*Department of Health Sciences
University Nove de Julho – UNINOVE, São Paulo, Brazil
E-mail rbe.pires@gmail.com*

Márcia Mello Costa De Liberal

*Department of Medicine
Federal University of São Paulo – Unifesp, São Paulo, Brazil
E-mail: deliberal@uol.com.br*

Chennyfer Dobbins Abi Rached

*Department of Health Sciences
University Nove de Julho – UNINOVE, São Paulo, Brazil
E-mail: chennyferr@yahoo.com.br*

Abstract

Many factors can influence inequalities in health care, for example, its unequal opportunities in education or employment. It is believed the social determinants of health are causal factors for which inequalities are unjust. Measuring causal variables in this context requires measuring unfair inequalities in four distinct categories, namely: legitimate effort, legitimate circumstance, illegitimate effort, and illegitimate circumstance. Lifestyle is a classic example of inequality as a legitimate circumstance because people have the chance to choose. Evaluating measures as well as unjust inequality measures in health and care delivery are necessary because the distribution of the variables may reflect fairness. Therefore, the aim of this study is to reflect on the methods of measuring inequality in health care. It is an analysis of these methods as the presence of unjust inequalities are no longer exclusivity of the so-called Third World or Developing Countries. We conclude that there are various methods of analyzing unfair inequalities in health and health care, but the method of multifarious analysis is more appropriate to allow different ethical positions.

Keywords: Inequality, Health Care, Multifarious Approach, Social Welfare

1. Introduction

Even though inequality measurement *per se* is a multifarious phenomena (Fleurbaey & Schokkaert, 2012), the methods commonly applied to health and health care consist of partial approaches. In other words, approaches that select the most relevant variables and setting them for comparative purposes in

one or more variate models, since by no means multifarious approaches can be considered all-encompassing and final. They do however take into consideration more variables and, by consequence, more sources of inequalities.

The partiality of the approaches is exactly one of the shortfalls presented by Fleurbaey and Schokkaert in their paper “Unfair inequalities in health and health care” (2009). In this work, the authors present a new (and somewhat novel) multifarious framework. They clearly draw inspiration from the literature about inequality of opportunity although, as discussed in this essay, some adaptations may be required, especially in the case of health care. This essay discusses not only the framework proposed by Fleurbaey and Schokkaert, but also some implications of its application and possible shortfalls of the method.

1.1. Inequality of Opportunity Framework

Amongst others, the literature on inequality of opportunity aims to build models that take into consideration several sources of inequality. When applied to Health Economics, the basic idea behind inequality of opportunity is that, amongst the factors that influence people’s health status or health-care use, some derive from personal choice and can, thus, be considered fair, while others are beyond individual’s scope of action and can be considered unfair. Therefore, if a person has a poorer health condition because he or she smokes, for example, it should not be a reason for concern, as smoking is a personal choice and the unhealthy status is then only fair. On the other hand, someone whose health status is very good due to a very wealthy endowment has a clear unfair advantage, once no child chooses the family in which he or she is born.

The latest approach for modelling inequality of opportunity was proposed by Roemer (1993, 1998, 2002) and considers that a person’s advantage or success (y_i) is determined by a vector of illegitimate factors, the circumstances (c_i) and a vector of legitimate factors, the effort (e_i). Notice that this framework already incorporates the level of productive technology as well as any redistribution that is brought through the existing institutions of the relevant community (Fleurbaey & Schokkaert, 2012).

$$y_i = y(c_i, e_i)$$

In this terminology, two individuals at the same level of effort should obtain the same degree of success otherwise, inequality of opportunity exists. Even though Roemer’s original model establishes a relationship between health and the variable(s) of interest to define the individual’s rank position in the distribution, this is only one possible approach and several others have emerged in the literature (Fleurbaey & Schokkaert, Op. Cit). Nonetheless, the general framework remains.

An important feature of the framework is the distinction between “effort” and “circumstance” as sources of fair or unfair inequalities. In general terms, inequalities between groups are considered fair or legitimate if they derive from natural circumstances (e.g. demographics) or are a result of choice (e.g. lifestyle), for which an individual is considered responsible. Later, the article presents the discussion if it is appropriate to consider natural circumstances fair and whether the terminology “circumstance” and “effort” can be transposed to the case of health care.

In opposition, illegitimate or unfair sources of inequality include any circumstances that lie beyond the individual’s control, including endowments, physical environment, access to health care services, etc (O’Donnell et al., 2012). Despite the importance of knowing, and hence, measuring total inequality, it is unfair inequality that requires greater attention and concern, once they produce a relevant social loss and are ethically objectionable. That is exactly the position of the authors in the paper reviewed.

Consistent with the economic rationale of utility maximization, Fleurbaey and Schokkaert (2009) have proposed a model in which an individual’s health is determined by his/her medical consumption (m_i), consumption of goods (c_i), including lifestyle (e.g. smoking), the genetic health endowment (e_i), a stochastic health shock (ε_i), job characteristics (o_i), including leisure and social background (s_i).

$$h_i = H(m_i, c_i, e_i, \varepsilon_i, o_i, s_i)$$

It is important to note that in this model some variables within the categories can be considered circumstances, whereas others may be regarded as effort. Given a budget constraint, the health outcome for the individual will be the result of a multiple equation. Dias and Jones (2009) propose a version even more general for this model, in which health is also determined by multiple factors.

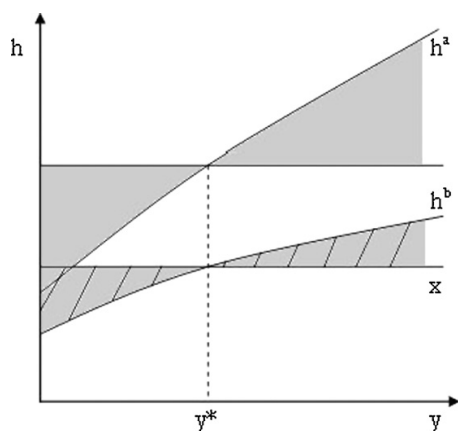
1.2. Direct Unfairness and the Fairness Gap

In their framework, one of the central issues addressed is how to move from the measurement of overall inequality to unfair inequality only. Two methods have been proposed to resolve this issue, namely i) direct unfairness and ii) fairness gap.

In general terms, direct unfairness establishes that “a measure of unfair inequality should not reflect legitimate variation in outcome, i.e. inequalities which are caused by differences in responsibility variables” (Fleurbaey & Schokkaert, 2009, p. 75). In other words, legitimate differences should not influence the inequality outcome. This technique, also known as conditional equality, eliminates the fair sources of inequality by correcting the outcome value (in the case of health, \tilde{h}_i). In other words, it builds an artificial distribution, in which the legitimate sources of inequality have no influence.

By contrast, the fairness gap uses the principle of compensation to obtain egalitarian equivalence, which means when or if a “measure of unfair inequality is zero, there should be no illegitimate differences left” (Fleurbaey & Schokkaert, Op. Cit, p. 75). This principle defines that all inequality must be compensated, or accounted for, if the unfair inequality measure is zero. As a result, two people with the same value for effort (i.e. variables for people can be held accountable) should obtain the same outcome. Even though both approaches are valid to deal with illegitimate sources of inequality, they do not yield the same results. The Figure 1 illustrates it.

Figure 1: Direct Unfairness and Fairness Gap



Source: Fleurbaey & Schokkaert, 2009.

Suppose we are looking at two groups of individuals (Group A and B) with different lifestyles. Group A is composed of “healthy lifestyle” individuals (e.g. people who are non-smokers, with a healthy diet, etc.) and can be considered healthier overall. Let h^a be the health function for group A and h^b the function for group B, in terms of a variable y deemed to represent an unfair source of health inequality, such as income. The measurement of direct fairness is done by fixing a lifestyle reference value – in this case, setting both Groups equal to the “unhealthy lifestyle” reference value of Group B – which yields a health of x at the mean income value of y^* . Comparing the distance between the curve for Group B and the reference line x will then give us a “direct fairness” measure of inequality. In the

figure, if we focus on group B, the striped area gives us a “direct fairness” measure of inequality (Fleurbaey & Schokkaert, Op. Cit).

This method has the obvious pitfall of completely neglecting the unfairness existing for group A, although it does satisfy the conditional equality principle which determines that inequality derived from different choices (individual conditions) is acceptable, i.e. so long as individuals can be held responsible, inequality between groups may occur and not be a source of concern. In the fairness gap method, on the other hand, we would fix a value y – in the case illustrated above, the mean income of y^* – and then take into account each individual difference, that is to calculate the gap between the individual’s actual health status – a point in the curve h^a or h^b – and the health status she or he would achieve if all unfair differences were removed. Here the shaded areas of the chart represent the size of inequality.

Nonetheless, the fairness gap method also has the pitfall of taking into consideration the difference in slopes of each group, at least ideally we would like to neutralize such effect in the analysis for health, as they represent differences in lifestyle. As both principles of conditional equality and egalitarian equivalence are important in the measurement of unfair inequality, one may consider the direct fairness a lower bound measure and the fairness gap, an upper bound one. It is clear that the fairness gap might be preferable as it satisfies the compensation principle. However, if there is a reason to believe that differences in lifestyles affect health for different socioeconomic groups, someone might consider the direct fairness method more adequate, as it places greater weight on personal choice and responsibility.

2. Transposition of the General Framework Applied to Health Care

Although the framework previously explained can be applied to health and health care, due to the nature of the empirical work to be pursued, the application for health care deserves better consideration as the terminology might be misleading. Consider a health care function in the form $hc(il, lg)$, where lg denotes variables that produce legitimate inequalities in health care, and il corresponds to illegitimate-type variables, which brings out ethically objectionable inequalities. For the purpose of the framework, let lg variables stand for need and il for everything else. In this case, a general formula for the health care function states:

$$hc(il_i, lg_i) = hc_i = hc(hn(SES_i, d_i, P^1_i), SES_i, d_i, P^2_i)$$

In this function, hn stands for health care needs, which depends on socioeconomic status (SES_i), demographic variables (d_i) and lifestyle preferences (P^1_i). Note that the model establishes that health care is also a function of differences in treatment preferences (P^2_i). The formula above has the interesting feature of allowing the distinction between the direct effect of socioeconomic variables in health care and its indirect effect (the one that passes through health care needs).

Traditionally, the socioeconomic inequality literature establishes that $il = SES$ and $lg = (d, P^1, P^2)$. This approach, however, has the disadvantage of disregarding the effect of socioeconomic variable on health care needs. Thus, as Fleurbaey and Schokkaert (2009) have proposed, it may be more interesting considering $il = SES$ and $lg = (hn, P^1, P^2)$. The correlation that arises between il and lg means that a simple “inequality of means” perspective cannot be used, unless properly standardized (Fleurbaey & Schokkaert, 2009). Nonetheless, it is important to highlight that considering $il = SES$ is only one possible ethical approach, several other normative decisions are possible.

Assuming that there is an ideal level of health care, which does not depend on the socioeconomic status of the individual, we have:

$$hc^*(hn_i, P^2_i, d_i)$$

The advantage (or disadvantage) of individual i is given by the gap between the health care he actually receives and the ideal one.

$$\Delta_i = hc_i - hc^*(hn_i, P^2_i, d_i)$$

The measure of the individual (dis)advantages can be seen as a measure of illegitimate inequality. The same methods of fairness gap and direct unfairness can be calculated for the health care

case. For the fairness gap, one needs to establish a reference value for il , in other words, the socioeconomic status that is considered to receive treatment the best possible way, or that is closer to the optimal health care value. In such case, the inequality measure will be given by:

$$hc_i - hc(hn_i, SES_{ref.}, d_{ref}, P_i^2)$$

Alternatively, one could evaluate the advantage or disadvantage of individuals given an effort level, which is, fixing all variables that derive from preference and choice. In this case, we would obtain the measure of direct unfairness. Again, once the measure of direct fairness does not satisfy the compensation principle, it cannot provide an adequate measure of horizontal inequality. Indeed, Fleurbaey and Schokkaert argue that, for the case of health care, the fairness gap is the most adequate measure of inequality, once it takes into account the slopes of the curves of each individual or group. Whereas we would like to neutralize such slopes for the case of health outcome (because they reflect lifestyle), for health care, they illustrate different needs, which must be accounted for in a good measure of horizontal inequality.

2.1. Legitimacy and Circumstantiality

The previous section has described how easily the framework proposed by Fleurbaey and Schokkaert can be transposed to the analysis of health care. Nonetheless, in the transposition there was no mention to the original circumstance and effort terminology. The reason is that, in this latter case, the original terminology may be misleading.

In the inequality of opportunity framework, all circumstantiality is considered unfair. By opposition, every effort variable is defined as fair. In health care, however, one may think of circumstances that are fair, while others are not. In reality, if one wished to categorize all variables of interest within the categories legitimate / illegitimate and effort / circumstance, the result would be four different categories of variables, namely legitimate effort, legitimate circumstance, illegitimate effort, illegitimate circumstance. The Table 1 presents the matrix of this mix. It also provides one example for each of the four subcategories.

Table 1: Fair/Unfair vs. Circumstance/Effort Matrix

	Fair / Legitimate	Unfair / Illegitimate
Circumstance / Constraint / Non-choice	(1)e.g. Need (Age)	(3)Childhood Income
Effort / Preference / Choice	(2)e.g. preference for treatment for which the individual is held responsible	(4) e.g. preference for treatment for which the individual is not held responsible - example due to socially entrenched low health expectations

2.2. Legitimate vs. Illegitimate: Where to Draw the Line

As mentioned earlier in the essay, in general, researchers and policy makers may consider any variable over which an individual has no control over source of unfair inequality. However, the line between legitimate and illegitimate sources of inequality is not always so clear. Therefore, examples may be enlightening.

For instance, consider the variable of age. It is obvious that no one has any control over aging process and, in health care, it is expected that infants and senior citizens demand a greater care. Especially the elderly, it is unarguable that their health status is, on average, more fragile and vulnerable. Thus, hardly someone would consider placing the variable of age in the effort category.

If we all agree that age is a circumstance, we must all admit that it is a source of unfair inequality. However, pure logic would tell us that if we are all subject to aging, we could all expect our health status to deteriorate over time. So, how much is aging really an illegitimate source of inequality? Some authors may consider it legitimate, as it simply means that the greater the age, the greater the need for health services.

Another interesting variable is smoking. The habit of smoking is a choice, therefore, an attitude the person should be responsible for. Researchers usually place the smoking variable amongst effort variables. In addition, as an effort variable, smoking is considered a legitimate source of inequality, as it is only fair that someone who smokes has a higher probability of falling ill.

Notwithstanding, in economic research we have enough evidence that shows the smoking habit is highly influenced by parental decision, over which an individual has no control. Moreover, descriptive statistics also show that a high proportion of smokers start the habit at an early age, in adolescence and, as non-adults, they cannot be legally held responsible for many of their actions.

Concisely, whether a variable is considered legitimate or illegitimate is a normative decision that falls in the researcher's hands. As in any modelling, the aim is to be as close to the reality as possible. Nevertheless, the perception of the reality may vary in accordance to political, sociological and economic interests. Interestingly, the multifarious methods here described allow different ethical positions and this could be considered one of the greatest advantages of the method proposed by Fleurbaey and Schokkaert. It does not implicitly set the norm. Rather the reference values must be explicit beforehand and, thus, different normative decisions regarding the placement of variables under fair and unfair are possible.

3. Summary and Concluding Remarks

The aim of this study was to evaluate the methods of measurement of inequality in health care. It is important to note that partial approaches were used, some modeling variables for comparison purposes in one or two variate models, and this method has been criticized because the inequality must be measured in a multifarious way.

Therefore, the most advantageous approach, according to literature, is the multifarious analysis because it allowed different ethical positions and perception of reality of each population, and may vary according to politics, sociology and economy.

The analysis of inequality of opportunity is considered fair and unfair, categorizing the variables of interest within these categories, namely: legitimate effort, legitimate circumstance, illegitimate effort, and illegitimate circumstance. As seen, four different categories emerge from the merge of the dualities, which may result in a more complex system of equations to measure unfair inequalities in health care.

It is observed that some authors propose a measure of overall inequality in health and health care, as opposed to a measure of socio-economic inequality. It could be more important, transposing the analytical framework of the traditional inequality of opportunity framework to the case of health care. As shown in this research, some adaptations are required.

Empirically, the measures of fairness gap and direct fairness have not been systematically applied to the reality of developing countries. This is a matter of great interest to the authors, as in Brazil this kind of measurement is rare and it has a socio-economic nature.

References

- [1] Fleurbaey, M. and Schokkaert, E., 2009. "Unfair inequalities in health and health care", *Journal of Health Economics*, Elsevier, vol. 28(1), pages 73-90, January.
- [2] Fleurbaey, M. and Schokkaert, E., 2012. "Chapter 16: Equity in Health and Health Care", *Handbook of Health Economics*, Volumes 2, edited by Mark V. Pauly Thomas G. McGuire, Pedro P. Barros, First edition 2012, North-Holland, Elsevier Science, P1003-1086.
- [3] O'Donnell, O, E van Doorslaer and A Wagstaff, "Decomposition of inequalities in health and health care", In: AM Jones (Ed.), *The Elgar Companion to Health Economics*, 2nd Edition, Edward Elgar, Cheltenham, chapter 17, 2012, 179-191
- [4] Roemer, John E., 1993. "A pragmatic theory of responsibility for the egalitarian planner". *Philosophy and Public Affairs* 22 (2):146-166.
- [5] Roemer, John E., 1998. *Equality of opportunity*, Harvard University Press
- [6] Roemer, John E., 2002. Equality of opportunity: a progress report. *Soc Choice Welfare* 19: 455–471
- [7] Rosa Dias, Pedro, 2009. "Inequality of opportunity in health: evidence from a UK cohort study". *Health Economics*, 18 (9). pp. 1057-1074. ISSN 1057-9230