Appendix 1 - The concentration index

The concentration index (CI) is analysed after the estimation of the following model, widely used within the equity literature (Kakwani, Wagstaff, and van Doorslaer 1997)*:

$$\frac{2\sigma_R^2}{\bar{h}} h_i = \alpha_0 + \alpha_1 R_i + \varepsilon_i$$

In the equation, R_i is the fractional rank of individual *i* in the living standards distribution, with individuals ordered from the poorest to the richest. σ_R^2 is the variance of R, h_i is the variable of interest (screening, in our case) and $\bar{h}$ is its correspondent mean. Finally, ε_i is the error term. The estimate of α_1 that results from the Ordinary Least Squares (OLS) regression is an estimate for the CI.

To assess the CI's statistical significance, an individual significance test on the estimated α_1 is performed, in which the null hypothesis is that $\alpha_1 = 0$, *i.e*, the CI is not statistically different from zero. If the null hypothesis is not rejected, then, we cannot rule out an equal distribution of screening, which, in our context, corresponds to equity in access to screening. If, on the contrary, the null hypothesis is rejected, then we can confidently conclude that there is inequality (inequity) in screening attendance. To decide upon the statistical significance (to reject or not to reject the null hypothesis) there are two alternatives: one, is to compare the statistical test (given by the ratio between the estimated parameter and its standard error) with the critical value from statistical tables; the other, is to resort on the p-value, which, putting it simply, indicates the minimum significant level from which the null hypothesis is rejected. The conventional significance levels are 1%, 5% and 10%, to which the p-value from the tests is compared to (we followed the usual procedure in the health economics and social sciences literature considering only the 1% and 5% levels). Thus, the reasoning is that if the statistical test is, in absolute terms, higher than the critical value, the null hypothesis is rejected (or, equivalently, if the p-value is lower than the conventional significance levels). Conversely, if the statistical test is lower than the critical value (p-value higher than the conventional significance levels), the null hypothesis cannot be rejected. The *conindex* command from Stata returns the estimated CI, the standard error and the p-value.

*Kakwani NC, Wagstaff A, van Doorslaer E. Socioeconomic Inequalities in Health: Measurement, Computation and Statistical Inference. J. Econom. 1997; 77(1): 87–104.