

Micro Empírica - Trabalho Final

Samuel Barbosa

Abril/2018

1 Descrição

Este exercício consistiu em (1) reproduzir as tabelas 1 a 3 do artigo **Morbidity Risk and Health-Insurance Coverage**, de Luis H. B. Braido e Genaro Dueire Lins, e (2) estender a análise para outras subpopulações de interesse. Como extensão, reproduzi as tabelas 2 e 3 do artigo original considerando apenas as subpopulações dos 25% mais pobres (tabelas 4 e 6 deste documento) e dos 25% mais ricos (tabelas 5 e 7), segundo a renda domiciliar.

2 Resultados

Os resultados são apresentados nas tabelas 1 a 7 deste documento. As tabelas 1 a 3 reproduzem as tabelas do artigo original. Os resultados foram reproduzidos com muita proximidade, porém não idênticamente, devido a sucessivas reponderações da PNAD. Em particular, apesar das reponderações, os mesmos coeficientes positivos e estatisticamente significativos foram obtidos nas tabelas 2 e 3.

A análise estendida para o quartil mais pobre da população (tabelas 4 e 6) resulta em um menor número de coeficientes positivos estatisticamente significativos, indicando que, devido a restrições orçamentárias, não há efeitos revelados de seleção adversa ou de risco moral nesta subpopulação. Este resultado é particularmente evidente nas tabelas 8 e 9, que consideram as populações das regiões metropolitanas de São Paulo e Rio de Janeiro conjuntamente, reduzindo efeitos de amostra pequena.

Embora no quartil mais rico (tabelas 5, 7 e 9) a quantidade de coeficientes positivos estatisticamente significativos seja maior, ainda não há evidência suficiente para afirmar a existência de uma correlação positiva entre risco e cobertura de planos de saúde.

Table 1: Fraction of Insured Agents per Age Group

	Age Group						
	0-17	18-29	30-39	40-49	50-59	60-69	≥ 70
<i>São Paulo</i> Metropolitan Area							
Individual Coverage	3,16%	5,24%	8,89%	10,63%	16,24%	22,28%	27,11%
Employer-Contracted Plan	33,49%	33,30%	37,84%	32,42%	31,07%	26,11%	24,75%
<i>Subpopulation Observations</i>	6.620	4.889	3.454	2.973	1.976	1.149	889
<i>Expanded Subpop. Size</i>	5.711.489	4.218.065	2.979.983	2.565.029	1.704.844	991.318	766.988
<i>Rio de Janeiro</i> Metropolitan Area							
Individual Coverage	2,12%	3,83%	6,60%	7,30%	9,80%	11,92%	14,48%
Employer-Contracted Plan	26,13%	26,40%	25,28%	26,90%	24,72%	22,38%	24,57%
<i>Subpopulation Observations</i>	4.393	3.292	2.409	2.494	1.909	1.175	1.050
<i>Expanded Subpop. Size</i>	2.966.586	2.223.110	1.626.803	1.684.211	1.289.167	793.486	709.069

Note: Estimated subpopulation means from the 2003 PNAD survey (with 384.154 observations representing 177.038.067 individuals). Survey design incorporated.

Table 2: Morbidity Incidence and Insurance Coverage in *São Paulo* Metropolitan Area

	Age Group						
	0-17	18-29	30-39	40-49	50-59	60-69	≥ 70
Arthritis or Rheumatism							
Individual Coverage	0,72%	0,24%	-0,71%	0,76%	-2,45%	-0,45%	7,94%*
Employer-Contracted Plan	-0,06%	-0,26%	-1,06%*	-0,59%	0,93%	1,98%	3,68%
Constant	0,24%**	0,93%***	2,66%***	5,26%***	12,10%***	15,68%***	23,60%***
Bronchitis or Asthma							
Individual Coverage	4,64%	1,20%	0,81%	0,22%	-0,13%	-3,34%*	-1,98%
Employer-Contracted Plan	-0,01%	0,87%	0,57%	0,46%	-0,08%	-0,92%	-0,18%
Constant	7,32%***	4,66%***	3,10%***	3,90%***	4,80%***	7,25%***	6,54%***
Cancer							
Individual Coverage	0,00%	0,26%	-0,00%	0,85%	1,44%	2,89%*	0,46%
Employer-Contracted Plan	0,14%	-0,01%	-0,17%	0,31%	-0,24%	1,99%	-0,54%
Constant	-0,00%	0,13%*	0,33%*	0,41%**	1,06%***	1,01%*	3,27%***
Chronic Renal Disease							
Individual Coverage	-0,24%**	0,25%	0,49%	1,51%	-0,34%	-0,42%	1,06%
Employer-Contracted Plan	-0,19%*	-0,35%	-0,15%	-0,20%	-1,07%	-2,21%*	-0,32%
Constant	0,24%**	0,53%***	1,14%***	1,65%***	2,21%***	3,54%***	3,50%***
Cirrhosis							
Individual Coverage	-0,00%	0,00%	-0,11%	0,26%	0,05%	-0,12%	-0,29%
Employer-Contracted Plan	0,05%	0,12%	-0,03%	-0,06%	-0,25%	-0,51%	-0,70%
Constant	0,00%	-0,00%	0,11%	0,06%	0,58%*	0,51%	0,70%
Depression							
Individual Coverage	0,14%	-0,03%	1,35%	1,18%	-1,27%	0,11%	4,58%
Employer-Contracted Plan	-0,06%	-0,18%	-0,44%	-1,97%*	-0,27%	-0,09%	-0,48%
Constant	0,33%***	2,76%***	4,19%***	7,68%***	8,74%***	8,09%***	9,11%***
Diabetes							
Individual Coverage	0,36%	-0,24%	-1,47%*	0,12%	-1,75%	-3,74%	-0,30%
Employer-Contracted Plan	-0,07%	-0,08%	-1,12%*	-1,61%*	-0,26%	-5,18%*	0,26%
Constant	0,12%*	0,63%***	2,12%***	4,31%***	9,22%***	15,85%***	15,65%***
Heart Disease							
Individual Coverage	0,03%	0,60%	-0,27%	1,66%	-0,02%	-7,50%**	1,87%
Employer-Contracted Plan	0,02%	0,02%	-0,39%	-0,93%	-1,90%	-9,05%***	0,53%
Constant	0,93%***	0,97%***	2,23%***	4,67%***	8,74%***	18,05%***	22,20%***
Hypertension							
Individual Coverage	-0,36%***	2,24%	-1,59%	0,08%	-6,87%*	-9,46%**	1,01%
Employer-Contracted Plan	-0,04%	-0,89%	-2,46%*	-2,98%	-4,12%	-7,75%*	-0,74%
Constant	0,36%***	3,23%***	9,73%***	21,44%***	38,33%***	50,08%***	52,10%***
Lumbar Pain							
Individual Coverage	0,34%	6,32%**	5,63%*	7,05%**	-0,69%	-0,45%	7,36%
Employer-Contracted Plan	0,21%	2,44%**	0,17%	2,04%	2,66%	-0,37%	3,43%
Constant	1,10%***	5,79%***	13,91%***	19,85%***	27,47%***	31,70%***	32,48%***
Tendonitis							
Individual Coverage	0,39%	3,68%*	6,13%***	2,10%	3,15%	3,69%	0,02%
Employer-Contracted Plan	0,47%	3,79%***	4,07%***	6,23%***	4,91%***	1,60%	-0,37%
Constant	0,57%***	2,96%***	3,97%***	5,49%***	6,82%***	6,07%***	5,37%***
Tuberculosis							
Individual Coverage	-0,07%	-0,17%*	-0,16%	-0,10%	-0,19%	-0,51%	0,18%
Employer-Contracted Plan	-0,03%	-0,04%	-0,01%	0,00%	0,62%	-0,51%	0,68%
Constant	0,07%	0,17%*	0,16%	0,41%**	0,19%	0,51%	0,23%
<i>Subpopulation Observations</i>	6.620	4.889	3.454	2.973	1.976	1.149	889
<i>Expanded Subpop. Size</i>	5.711.489	4.218.065	2.979.983	2.565.029	1.704.844	991.318	766.988

Note: Survey-adjusted OLS regressions; full sample used in all regressions (384.154 observations representing 177.038.067 individuals). Dependent variable: each of the 12 types of health problems; independent variables: individual and Employer-Contracted plan dummies and a constant term. Robust (linearized) standard errors, which incorporate the survey design, were used in the significance tests; * indicates significance at the 5% level; statistically positive dummy coefficients are shadowed.

Table 3: Morbidity Incidence and Insurance Coverage in *Rio de Janeiro* Metropolitan Area

	Age Group						
	0-17	18-29	30-39	40-49	50-59	60-69	≥ 70
Arthritis or Rheumatism							
Individual Coverage	-0,35%***	0,45%	-0,11%	-4,51%***	-1,94%	9,94%*	-2,19%
Employer-Contracted Plan	-0,18%	-0,44%	-0,16%	-2,28%*	0,50%	1,60%	-0,50%
Constant	0,35%***	1,13%***	2,62%***	6,15%***	12,64%***	25,78%***	37,72%***
Bronchitis or Asthma							
Individual Coverage	4,88%	0,82%	1,46%	0,55%	-1,06%	0,46%	-2,41%
Employer-Contracted Plan	1,01%	2,48%**	-0,02%	1,04%	-0,87%	3,35%*	2,21%
Constant	5,87%***	2,35%***	2,32%***	1,65%***	3,20%***	3,11%***	4,38%***
Cancer							
Individual Coverage	-0,03%	-0,17%*	-0,06%	1,10%	0,06%	0,85%	1,38%
Employer-Contracted Plan	-0,03%	0,17%	-0,06%	-0,40%	0,58%	0,60%	2,62%*
Constant	0,03%	0,17%*	0,06%	0,55%**	0,48%*	1,30%**	1,25%**
Chronic Renal Disease							
Individual Coverage	0,98%	-0,52%***	-0,41%	0,06%	-2,10%**	1,63%	-1,66%
Employer-Contracted Plan	0,08%	-0,41%*	-0,22%	-0,24%	-0,94%	-0,04%	0,90%
Constant	0,10%	0,52%***	1,04%***	1,58%***	2,64%***	1,94%***	2,97%***
Cirrhosis							
Individual Coverage	-0,06%	0,00%	-0,06%	-0,24%*	0,37%	-0,52%*	-0,31%
Employer-Contracted Plan	-0,06%	0,00%	0,10%	-0,24%*	0,05%	0,24%	-0,31%
Constant	0,06%	0,00%	0,06%	0,24%*	0,16%	0,52%*	0,31%
Depression							
Individual Coverage	-0,16%	1,52%	-0,61%	3,80%	0,07%	4,96%	2,17%
Employer-Contracted Plan	-0,16%	-0,85%*	-0,28%	-0,53%	-1,37%	4,64%	4,20%
Constant	0,16%	1,65%***	4,39%***	5,00%***	6,88%***	7,90%***	7,04%***
Diabetes							
Individual Coverage	-0,22%**	-0,35%**	-0,22%	1,53%	-0,49%	6,20%	0,52%
Employer-Contracted Plan	-0,22%**	-0,00%	-0,36%	-1,62%*	-2,35%	0,13%	-0,70%
Constant	0,22%**	0,35%**	0,85%***	3,41%***	7,44%***	11,66%***	16,59%***
Heart Disease							
Individual Coverage	-0,44%***	0,67%	0,32%	0,01%	1,33%	-0,03%	2,37%
Employer-Contracted Plan	-0,01%	-0,34%	-0,39%	-1,91%*	-0,25%	1,32%	2,21%
Constant	0,44%***	0,91%***	2,19%***	5,48%***	9,36%***	15,02%***	20,66%***
Hypertension							
Individual Coverage	-0,29%**	-0,23%	-1,31%	-2,41%	4,91%	5,65%	-6,24%
Employer-Contracted Plan	-0,11%	-0,31%	-2,73%*	0,38%	-4,39%	-7,53%*	3,21%
Constant	0,29%**	2,61%***	10,12%***	19,44%***	36,80%***	49,35%***	54,93%***
Lumbar Pain							
Individual Coverage	0,31%	6,51%*	-4,46%	-2,95%	1,05%	6,85%	2,60%
Employer-Contracted Plan	0,37%	1,85%	-1,09%	-0,42%	-0,20%	5,05%	1,35%
Constant	0,76%***	5,40%***	13,89%***	22,18%***	30,50%***	36,01%***	38,19%***
Tendonitis							
Individual Coverage	-0,22%*	0,68%	6,43%**	1,04%	6,29%**	8,72%**	-2,41%
Employer-Contracted Plan	0,56%*	0,95%	1,89%	3,41%**	5,89%***	3,84%*	-0,12%
Constant	0,22%*	1,70%***	2,38%***	2,25%***	2,80%***	4,15%***	4,38%***
Tuberculosis							
Individual Coverage	0,00%	-0,17%*	0,38%	0,12%	-0,08%	-0,32%	-0,47%
Employer-Contracted Plan	0,00%	-0,17%*	-0,24%*	-0,28%	0,34%	-1,04%*	-0,47%
Constant	0,00%	0,17%*	0,24%*	0,43%**	0,08%	1,04%*	0,47%
<i>Subpopulation Observations</i>	4.393	3.292	2.409	2.494	1.909	1.175	1.050
<i>Expanded Subpop. Size</i>	2.966.586	2.223.110	1.626.803	1.684.211	1.289.167	793.486	709.069

Note: Survey-adjusted OLS regressions; full sample used in all regressions (384.154 observations representing 177.038.067 individuals). Dependent variable: each of the 12 types of health problems; independent variables: individual and Employer-Contracted plan dummies and a constant term. Robust (linearized) standard errors, which incorporate the survey design, were used in the significance tests; * indicates significance at the 5% level; statistically positive dummy coefficients are shadowed.

Table 4: Morbidity Incidence and Insurance Coverage amongst poorest quartile in *São Paulo* Metropolitan Area

	Age Group						
	0-17	18-29	30-39	40-49	50-59	60-69	≥ 70
Arthritis or Rheumatism							
Individual Coverage	0,00%	-0,79%*	-3,01%***	-6,08%***	3,18%	-16,67%***	11,53%
Employer-Contracted Plan	0,00%	2,66%	-3,01%***	1,06%	17,46%	19,05%	10,40%
Constant	0,00%	0,79%*	3,01%***	6,08%***	11,11%***	16,67%***	25,96%***
Bronchitis or Asthma							
Individual Coverage	0,18%	2,35%	-3,71%***	-5,74%***	-7,22%***	-7,94%**	4,81%
Employer-Contracted Plan	6,33%	0,15%	-3,71%***	-5,74%***	-7,22%***	-0,80%	5,94%
Constant	7,51%***	6,75%***	3,71%***	5,74%***	7,22%***	7,94%**	7,69%**
Cancer							
Individual Coverage	0,00%	-0,20%	-0,46%	0,00%	-0,56%	-0,79%	-1,92%
Employer-Contracted Plan	0,00%	-0,20%	-0,46%	0,00%	-0,56%	-0,79%	2,62%
Constant	0,00%	0,20%	0,46%	0,00%	0,56%	0,79%	1,92%
Chronic Renal Disease							
Individual Coverage	-0,34%	-0,79%*	-0,93%*	19,86%	-1,67%	-3,17%*	15,87%
Employer-Contracted Plan	-0,34%	-0,79%*	-0,93%*	-2,36%**	-1,67%	-3,17%*	-2,89%
Constant	0,34%	0,79%*	0,93%*	2,36%**	1,67%	3,17%*	2,89%
Cirrhosis							
Individual Coverage	0,00%	0,00%	-0,23%	0,00%	-2,22%*	0,00%	-2,89%
Employer-Contracted Plan	0,00%	0,00%	-0,23%	0,00%	-2,22%*	0,00%	-2,89%
Constant	0,00%	0,00%	0,23%	0,00%	2,22%*	0,00%	2,89%
Depression							
Individual Coverage	-0,17%	-4,76%***	-3,95%***	14,79%	15,25%	-7,14%**	12,49%
Employer-Contracted Plan	-0,17%	-4,76%***	-3,95%***	6,86%	-13,33%***	0,00%	-3,41%
Constant	0,17%	4,76%***	3,95%***	7,43%***	13,33%***	7,14%**	12,50%***
Diabetes							
Individual Coverage	-0,08%	-1,19%*	-2,78%**	-3,72%***	-13,89%***	-0,00%	9,60%
Employer-Contracted Plan	-0,08%	-1,19%*	-2,78%**	-3,72%***	-13,89%***	-7,14%	7,34%
Constant	0,08%	1,19%*	2,78%**	3,72%***	13,89%***	14,29%***	15,39%***
Heart Disease							
Individual Coverage	-1,10%***	-1,39%*	-1,86%**	-6,42%***	21,92%	-7,94%	2,41%
Employer-Contracted Plan	-1,10%***	-1,39%*	-1,86%**	0,72%	-6,67%***	-15,08%	15,48%
Constant	1,10%***	1,39%*	1,86%**	6,42%***	6,67%***	22,22%***	16,35%***
Hypertension							
Individual Coverage	-0,42%*	-4,96%***	16,02%	8,67%	12,71%	-27,00%	-1,45%
Employer-Contracted Plan	-0,42%*	-1,51%	-12,53%***	-3,23%	-30,16%*	-12,68%	5,95%
Constant	0,42%*	4,96%***	12,53%***	24,66%***	44,45%***	55,56%***	57,70%***
Lumbar Pain							
Individual Coverage	-1,01%**	-7,34%***	11,85%	23,50%	38,09%*	-6,35%	8,17%
Employer-Contracted Plan	0,53%	-0,44%	-8,01%	0,49%	-19,05%	-6,36%	-8,30%
Constant	1,01%**	7,34%***	16,71%***	20,95%***	33,34%***	34,92%***	35,58%***
Tendonitis							
Individual Coverage	-0,67%*	-3,57%***	11,26%	-5,74%***	7,07%	-5,56%**	-0,49%
Employer-Contracted Plan	0,86%	3,33%	5,68%	1,40%	7,07%	1,59%	2,36%
Constant	0,67%*	3,57%***	3,02%***	5,74%***	7,22%***	5,56%**	6,73%**
Tuberculosis							
Individual Coverage	0,00%	-0,60%	0,00%	0,00%	0,00%	-0,79%	0,00%
Employer-Contracted Plan	0,00%	-0,60%	0,00%	0,00%	0,00%	-0,79%	4,55%
Constant	0,00%	0,60%	0,00%	0,00%	0,00%	0,79%	0,00%
<i>Subpopulation Observations</i>	1.263	544	461	319	194	147	142
<i>Expanded Subpop. Size</i>	1.089.676	469.326	397.737	275.241	167.379	126.826	122.510

Note: Survey-adjusted OLS regressions; full sample used in all regressions (384.154 observations representing 177.038.067 individuals). Dependent variable: each of the 12 types of health problems; independent variables: individual and Employer-Contracted plan dummies and a constant term. Robust (linearized) standard errors, which incorporate the survey design, were used in the significance tests; * indicates significance at the 5% level; statistically positive dummy coefficients are shadowed.

Table 5: Morbidity Incidence and Insurance Coverage amongst richest quartile in *São Paulo* Metropolitan Area

	Age Group						
	0-17	18-29	30-39	40-49	50-59	60-69	≥ 70
Arthritis or Rheumatism							
Individual Coverage	0,62%	-0,08%	-0,25%	1,09%	-2,54%	-0,77%	2,77%
Employer-Contracted Plan	-0,18%	-0,19%	-0,28%	0,00%	-0,72%	-0,22%	-2,33%
Constant	0,26%	0,63%*	1,90%**	4,84%***	11,81%***	14,06%***	24,00%***
Bronchitis or Asthma							
Individual Coverage	2,60%	1,82%	3,04%	2,72%	2,07%	-2,32%	-0,85%
Employer-Contracted Plan	0,31%	1,94%	1,84%	1,47%	2,24%	1,46%	0,17%
Constant	6,25%***	4,19%***	1,90%*	2,79%***	2,36%**	5,21%**	4,00%*
Cancer							
Individual Coverage	0,00%	-0,21%	-0,06%	0,95%	1,13%	4,16%*	-0,06%
Employer-Contracted Plan	0,24%	-0,03%	-0,23%	0,28%	-1,89%*	2,55%	-1,50%
Constant	-0,00%	0,21%	0,48%	0,74%*	2,10%**	1,04%	4,00%*
Chronic Renal Disease							
Individual Coverage	-0,26%	-0,08%	0,87%	0,07%	-0,61%	0,81%	0,75%
Employer-Contracted Plan	-0,26%	-0,37%	0,06%	-0,58%	-2,00%*	-0,54%	0,10%
Constant	0,26%	0,63%*	1,19%	2,05%**	2,63%**	2,08%*	2,40%
Cirrhosis							
Individual Coverage	0,00%	0,00%	-0,24%	0,42%	0,28%	0,58%	0,00%
Employer-Contracted Plan	0,00%	0,18%	-0,11%	0,00%	-0,11%	-0,00%	0,00%
Constant	0,00%	0,00%	0,24%	-0,00%	0,53%	0,00%	0,00%
Depression							
Individual Coverage	0,23%	-0,12%	0,43%	0,13%	-1,42%	-0,41%	4,62%
Employer-Contracted Plan	-0,33%	0,32%	-1,15%	-2,08%	-0,13%	0,92%	0,27%
Constant	0,65%*	2,30%***	4,51%***	7,08%***	7,87%***	6,77%***	6,40%**
Diabetes							
Individual Coverage	-0,13%	0,23%	-1,49%	-0,57%	-0,35%	-3,48%	-2,65%
Employer-Contracted Plan	-0,13%	0,30%	-1,03%	-0,89%	0,55%	-5,37%	-5,90%
Constant	0,13%	0,31%	1,90%**	3,54%***	7,61%***	15,62%***	18,40%***
Heart Disease							
Individual Coverage	-0,78%	-0,63%*	0,70%	2,02%	0,33%	-3,72%	4,41%
Employer-Contracted Plan	0,25%	0,25%	0,92%	-0,39%	-1,65%	-4,82%	3,33%
Constant	0,78%	0,63%*	0,95%	3,91%***	8,14%***	13,54%***	20,00%***
Hypertension							
Individual Coverage	-0,39%	1,06%	1,12%	-0,54%	-2,22%	-7,22%	11,98%
Employer-Contracted Plan	-0,23%	-0,01%	1,02%	-2,15%	0,31%	-5,30%	8,30%
Constant	0,39%	1,68%***	5,46%***	19,18%***	30,45%***	44,79%***	39,20%***
Lumbar Pain							
Individual Coverage	1,09%	8,20%**	4,48%	8,34%*	1,52%	1,18%	10,60%
Employer-Contracted Plan	-0,14%	3,49%**	2,05%	4,08%	4,36%	2,15%	1,13%
Constant	1,56%**	4,92%***	11,16%***	17,51%***	23,89%***	26,56%***	27,20%***
Tendonitis							
Individual Coverage	0,73%	4,07%*	6,25%**	0,26%	4,97%*	1,84%	3,92%
Employer-Contracted Plan	0,22%	3,18%***	5,06%***	6,11%***	6,62%***	-0,61%	3,37%
Constant	1,04%*	3,04%***	4,04%***	6,52%***	5,51%***	6,25%***	0,80%
Tuberculosis							
Individual Coverage	0,00%	-0,10%	-0,00%	0,05%	0,00%	0,00%	-0,80%
Employer-Contracted Plan	0,00%	-0,10%	0,12%	0,21%	0,84%*	0,00%	0,03%
Constant	0,00%	0,10%	-0,00%	0,37%	-0,00%	0,00%	0,80%
<i>Subpopulation Observations</i>	2.146	2.280	1.466	1.454	1.107	560	372
<i>Expanded Subpop. Size</i>	1.851.461	1.967.092	1.264.807	1.254.454	955.099	483.149	320.938

Note: Survey-adjusted OLS regressions; full sample used in all regressions (384.154 observations representing 177.038.067 individuals). Dependent variable: each of the 12 types of health problems; independent variables: individual and Employer-Contracted plan dummies and a constant term. Robust (linearized) standard errors, which incorporate the survey design, were used in the significance tests; * indicates significance at the 5% level; statistically positive dummy coefficients are shadowed.

Table 6: Morbidity Incidence and Insurance Coverage amongst poorest quartile in *Rio de Janeiro* Metropolitan Area

	Age Group						
	0-17	18-29	30-39	40-49	50-59	60-69	≥ 70
Arthritis or Rheumatism							
Individual Coverage	-0,22%	-2,07%**	-3,22%**	-6,49%***	53,86%*	72,05%***	-28,42%
Employer-Contracted Plan	-0,22%	-2,07%**	-3,22%**	-6,49%***	3,84%	-0,70%	-19,84%
Constant	0,22%	2,07%**	3,22%**	6,49%***	21,15%***	27,95%***	48,42%***
Bronchitis or Asthma							
Individual Coverage	-6,81%***	-3,22%***	-3,22%***	47,73%	23,07%	-1,86%	17,62%
Employer-Contracted Plan	-0,92%	0,62%	-3,22%***	6,06%	-1,92%*	7,23%	-2,38%
Constant	6,81%***	3,22%***	3,22%***	2,27%**	1,92%*	1,86%	2,38%
Cancer							
Individual Coverage	0,00%	0,00%	0,00%	-0,32%	-0,48%	-1,86%	0,00%
Employer-Contracted Plan	0,00%	0,00%	0,00%	-0,32%	-0,48%	-1,86%	0,00%
Constant	0,00%	0,00%	0,00%	0,32%	0,48%	1,86%	0,00%
Chronic Renal Disease							
Individual Coverage	-0,22%	-0,69%	15,79%	-1,95%*	-4,81%**	-2,49%*	-3,97%*
Employer-Contracted Plan	-0,22%	-0,69%	-0,88%	6,38%	-4,81%**	-2,49%*	10,31%
Constant	0,22%	0,69%	0,88%	1,95%*	4,81%**	2,49%*	3,97%*
Cirrhosis							
Individual Coverage	0,00%	0,00%	0,00%	-0,98%	0,00%	-1,24%	0,00%
Employer-Contracted Plan	0,00%	0,00%	0,00%	-0,98%	0,00%	-1,24%	0,00%
Constant	0,00%	0,00%	0,00%	0,98%	0,00%	1,24%	0,00%
Depression							
Individual Coverage	-0,11%	-2,76%***	-4,09%***	43,83%	37,48%	56,12%*	9,68%
Employer-Contracted Plan	-0,11%	-2,76%***	25,90%	2,17%	-0,00%	7,62%	3,98%
Constant	0,11%	2,76%***	4,09%***	6,17%***	12,50%***	10,56%***	10,32%***
Diabetes							
Individual Coverage	-0,45%*	-0,46%	-0,88%	-2,27%**	14,90%	24,62%	-22,22%***
Employer-Contracted Plan	-0,45%*	-0,46%	-0,88%	6,06%	-10,10%***	0,39%	-22,22%***
Constant	0,45%*	0,46%	0,88%	2,27%**	10,10%***	8,70%***	22,22%***
Heart Disease							
Individual Coverage	-0,56%*	-1,61%**	-3,80%***	-7,47%***	37,96%	16,55%	-7,78%
Employer-Contracted Plan	-0,56%*	2,24%	-3,80%***	0,86%	0,50%	1,41%	15,08%
Constant	0,56%*	1,61%**	3,80%***	7,47%***	12,02%***	16,77%***	27,78%***
Hypertension							
Individual Coverage	-0,22%	-4,84%***	-13,16%***	-21,75%***	61,54%***	49,07%***	-21,91%
Employer-Contracted Plan	-0,22%	-4,84%***	-3,16%	3,26%	-25,94%*	21,80%	9,53%
Constant	0,22%	4,84%***	13,16%***	21,75%***	38,46%***	50,93%***	61,91%***
Lumbar Pain							
Individual Coverage	-0,67%*	-6,22%***	18,40%	23,05%	14,44%	59,01%***	-8,41%
Employer-Contracted Plan	-0,67%*	-2,38%	-4,90%	6,38%	1,92%	13,53%	-5,53%
Constant	0,67%*	6,22%***	14,91%***	26,95%***	35,58%***	40,99%***	48,41%***
Tendonitis							
Individual Coverage	0,00%	-1,61%**	14,92%	48,70%	22,62%	28,97%	-5,55%**
Employer-Contracted Plan	0,00%	-1,61%**	-1,75%*	-1,30%*	10,09%	4,74%	8,73%
Constant	0,00%	1,61%**	1,75%*	1,30%*	2,40%*	4,35%**	5,55%**
Tuberculosis							
Individual Coverage	0,00%	-0,69%	0,00%	-1,30%*	0,00%	-1,24%	-0,79%
Employer-Contracted Plan	0,00%	-0,69%	0,00%	-1,30%*	0,00%	-1,24%	-0,79%
Constant	0,00%	0,69%	0,00%	1,30%*	0,00%	1,24%	0,79%
<i>Subpopulation Observations</i>	934	463	358	322	220	175	138
<i>Expanded Subpop. Size</i>	630.751	312.663	241.765	217.448	148.567	118.178	93.196

Note: Survey-adjusted OLS regressions; full sample used in all regressions (384.154 observations representing 177.038.067 individuals). Dependent variable: each of the 12 types of health problems; independent variables: individual and Employer-Contracted plan dummies and a constant term. Robust (linearized) standard errors, which incorporate the survey design, were used in the significance tests; * indicates significance at the 5% level; statistically positive dummy coefficients are shadowed.

Table 7: Morbidity Incidence and Insurance Coverage amongst richest quartile in *Rio de Janeiro* Metropolitan Area

	Age Group						
	0-17	18-29	30-39	40-49	50-59	60-69	≥ 70
Arthritis or Rheumatism							
Individual Coverage	-0,00%	-0,21%	1,40%	-4,14%**	-1,56%	3,94%	1,53%
Employer-Contracted Plan	0,14%	-0,44%	-0,20%	-1,09%	3,07%	-5,07%	6,58%
Constant	-0,00%	1,29%**	2,20%**	5,57%***	8,71%***	28,14%***	31,80%***
Bronchitis or Asthma							
Individual Coverage	2,44%	-0,37%	1,47%	-2,42%**	-0,43%	-2,70%	-3,84%
Employer-Contracted Plan	1,98%	2,97%**	-0,77%	0,56%	-0,18%	0,52%	0,17%
Constant	4,97%***	1,45%**	3,03%***	2,42%**	2,37%**	5,53%***	5,64%***
Cancer							
Individual Coverage	0,00%	-0,48%	0,00%	1,66%	-0,14%	0,82%	2,58%
Employer-Contracted Plan	0,00%	-0,14%	0,00%	-0,48%	0,31%	0,74%	3,63%*
Constant	0,00%	0,48%	0,00%	0,48%	0,79%	2,01%*	1,03%
Chronic Renal Disease							
Individual Coverage	-0,21%	-0,16%	-1,65%*	-0,27%	-0,93%	-0,12%	-1,03%
Employer-Contracted Plan	-0,21%	0,01%	-0,90%	-0,63%	0,06%	0,19%	3,63%*
Constant	0,21%	0,16%	1,65%*	1,69%*	1,58%*	2,01%*	1,03%
Cirrhosis							
Individual Coverage	0,00%	0,00%	0,00%	-0,24%	0,65%	0,00%***	0,00%
Employer-Contracted Plan	0,00%	0,00%	0,00%	-0,24%	0,27%	1,10%	0,00%
Constant	0,00%	0,00%	0,00%	0,24%	0,00%	-0,00%**	0,00%
Depression							
Individual Coverage	0,00%	0,11%	-2,05%	2,79%	-0,08%	0,52%	3,50%
Employer-Contracted Plan	0,00%	0,05%	-0,35%	0,12%	-1,17%	1,20%	3,52%
Constant	0,00%	0,97%*	3,86%***	4,36%***	5,28%***	7,03%***	4,62%**
Diabetes							
Individual Coverage	-0,21%	-0,16%	-0,20%	-2,47%	-0,35%	1,03%	0,97%
Employer-Contracted Plan	-0,21%	0,18%	-0,60%	-4,05%***	-0,06%	-1,98%	-1,09%
Constant	0,21%	0,16%	1,10%*	5,33%***	5,54%***	14,07%***	17,95%***
Heart Disease							
Individual Coverage	-0,62%	0,59%	1,32%	1,11%	-0,63%	-0,74%	5,99%
Employer-Contracted Plan	-0,05%	-0,14%	0,13%	-1,40%	1,10%	4,42%	4,07%
Constant	0,62%	0,48%	1,38%*	4,60%***	7,12%***	12,06%***	17,44%***
Hypertension							
Individual Coverage	-0,62%	-0,05%	-1,61%	1,16%	3,77%	12,33%*	-7,89%
Employer-Contracted Plan	-0,34%	0,91%	-3,30%	2,57%	-1,74%	-4,02%	-0,46%
Constant	0,62%	1,13%**	8,82%***	15,98%***	33,25%***	45,23%***	57,44%***
Lumbar Pain							
Individual Coverage	1,23%	5,00%	-1,46%	2,08%	1,92%	11,80%	11,43%*
Employer-Contracted Plan	0,94%	1,79%	0,81%	3,40%	3,22%	6,71%	10,74%*
Constant	0,62%	4,67%***	10,47%***	17,92%***	26,65%***	30,65%***	28,21%***
Tendonitis							
Individual Coverage	-0,41%	-0,10%	5,43%*	-0,77%	5,42%*	5,36%	-0,89%
Employer-Contracted Plan	0,58%	0,30%	1,18%	2,55%	6,94%***	3,76%	2,22%
Constant	0,41%	2,25%***	3,58%***	3,63%***	2,37%**	5,03%**	3,59%**
Tuberculosis							
Individual Coverage	0,00%	-0,16%	0,07%	-0,24%	-0,26%	-1,00%	-0,51%
Employer-Contracted Plan	0,00%	-0,16%	-0,83%	-0,24%	0,01%	-1,00%	-0,51%
Constant	0,00%	0,16%	0,83%	0,24%	0,26%	1,00%	0,51%
<i>Subpopulation Observations</i>	1.243	1.302	873	1.022	898	487	478
<i>Expanded Subpop. Size</i>	839.365	879.251	589.533	690.161	606.438	328.881	322.784

Note: Survey-adjusted OLS regressions; full sample used in all regressions (384.154 observations representing 177.038.067 individuals). Dependent variable: each of the 12 types of health problems; independent variables: individual and Employer-Contracted plan dummies and a constant term. Robust (linearized) standard errors, which incorporate the survey design, were used in the significance tests; * indicates significance at the 5% level; statistically positive dummy coefficients are shadowed.

Table 8: Morbidity Incidence and Insurance Coverage amongst poorest quartile in both *São Paulo* and *Rio de Janeiro* Metropolitan Area

	Age Group						
	0-17	18-29	30-39	40-49	50-59	60-69	≥ 70
Arthritis or Rheumatism							
Individual Coverage	-0,08%	-1,31%***	-3,09%***	-6,27%***	17,18%	2,81%	-2,84%
Employer-Contracted Plan	-0,08%	0,72%	-3,09%***	-1,99%	11,01%	10,19%	-2,08%
Constant	0,08%	1,31%***	3,09%***	6,27%***	15,88%***	22,31%***	36,89%***
Bronchitis or Asthma							
Individual Coverage	-1,06%	2,16%	-3,52%***	3,22%	3,02%	-4,90%***	8,87%
Employer-Contracted Plan	4,28%	0,31%	-3,52%***	-0,84%	-4,71%***	2,98%	5,81%
Constant	7,25%***	5,33%***	3,52%***	4,19%***	4,71%***	4,90%***	5,11%***
Cancer							
Individual Coverage	0,00%	-0,12%	-0,29%	-0,15%	-0,52%	-1,33%*	-0,99%
Employer-Contracted Plan	0,00%	-0,12%	-0,29%	-0,15%	-0,52%	-1,33%*	2,65%
Constant	0,00%	0,12%	0,29%	0,15%	0,52%	1,33%*	0,99%
Chronic Renal Disease							
Individual Coverage	-0,30%*	-0,75%**	5,79%	16,75%	-3,16%***	-2,83%**	11,66%
Employer-Contracted Plan	-0,30%*	-0,75%**	-0,91%**	1,17%	-3,16%***	-2,83%**	-0,56%
Constant	0,30%*	0,75%**	0,91%**	2,18%***	3,16%***	2,83%**	3,41%**
Cirrhosis							
Individual Coverage	0,00%	0,00%	-0,14%	-0,44%	-1,17%*	-0,62%	-1,48%
Employer-Contracted Plan	0,00%	0,00%	-0,14%	-0,44%	-1,17%*	-0,62%	-1,48%
Constant	0,00%	0,00%	0,14%	0,44%	1,17%*	0,62%	1,48%
Depression							
Individual Coverage	-0,15%	-3,96%***	-4,00%***	19,47%	22,26%	7,90%	12,57%
Employer-Contracted Plan	-0,15%	-3,96%***	3,62%	5,03%	-7,04%	2,50%	-1,31%
Constant	0,15%	3,96%***	4,00%***	6,87%***	12,94%***	8,85%***	11,44%***
Diabetes							
Individual Coverage	-0,22%*	-0,90%**	-2,05%***	-3,07%***	-4,36%	7,57%	1,37%
Employer-Contracted Plan	-0,22%*	-0,90%**	-2,05%***	0,28%	-12,09%***	-3,61%	-0,52%
Constant	0,22%*	0,90%**	2,05%***	3,07%***	12,09%***	11,49%***	18,71%***
Heart Disease							
Individual Coverage	-0,90%***	-1,48%***	-2,60%***	-6,89%***	25,99%	-0,43%	-2,91%
Employer-Contracted Plan	-0,90%***	0,11%	-2,60%***	0,73%	-3,30%	-8,15%	12,11%
Constant	0,90%***	1,48%***	2,60%***	6,89%***	9,21%***	19,50%***	21,91%***
Hypertension							
Individual Coverage	-0,35%**	-4,91%***	4,31%	5,04%	28,79%	-6,74%	-6,70%
Employer-Contracted Plan	-0,35%**	-2,88%	-10,23%***	-0,49%	-28,15%**	1,00%	5,45%
Constant	0,35%**	4,91%***	12,77%***	23,36%***	41,60%***	53,24%***	59,75%***
Lumbar Pain							
Individual Coverage	-0,88%***	-6,89%***	14,45%	21,63%	30,41%*	8,56%	1,19%
Employer-Contracted Plan	0,21%	-1,25%	-6,99%	2,57%	-9,16%	0,49%	-11,43%
Constant	0,88%***	6,89%***	16,02%***	23,64%***	34,40%***	37,96%***	41,82%***
Tendonitis							
Individual Coverage	-0,42%*	-2,78%***	12,71%	3,66%	12,68%	3,42%	-1,14%
Employer-Contracted Plan	0,67%	1,27%	3,96%	0,53%	8,51%	2,93%	3,97%
Constant	0,42%*	2,78%***	2,53%***	3,75%***	4,93%***	4,95%***	6,16%***
Tuberculosis							
Individual Coverage	0,00%	-0,63%*	0,00%	-0,58%*	0,00%	-1,02%	-0,39%
Employer-Contracted Plan	0,00%	-0,63%*	0,00%	-0,58%*	0,00%	-1,02%	3,25%
Constant	0,00%	0,63%*	0,00%	0,58%*	0,00%	1,02%	0,39%
<i>Subpopulation Observations</i>	2.197	1.007	819	641	414	322	280
<i>Expanded Subpop. Size</i>	1.720.427	781.989	639.502	492.689	315.946	245.004	215.706

Note: Survey-adjusted OLS regressions; full sample used in all regressions (384.154 observations representing 177.038.067 individuals). Dependent variable: each of the 12 types of health problems; independent variables: individual and Employer-Contracted plan dummies and a constant term. Robust (linearized) standard errors, which incorporate the survey design, were used in the significance tests; * indicates significance at the 5% level; statistically positive dummy coefficients are shadowed.

Table 9: Morbidity Incidence and Insurance Coverage amongst richest quartile in both *São Paulo* and *Rio de Janeiro* Metropolitan Area

	Age Group						
	0-17	18-29	30-39	40-49	50-59	60-69	≥ 70
Arthritis or Rheumatism							
Individual Coverage	0,47%	-0,15%	0,14%	-0,61%	-1,87%	-0,98%	1,15%
Employer-Contracted Plan	-0,08%	-0,29%	-0,29%	-0,40%	0,89%	-2,63%	2,22%
Constant	0,17%	0,85%***	2,02%***	5,11%***	10,45%***	20,37%***	28,29%***
Bronchitis or Asthma							
Individual Coverage	2,63%	1,34%	2,47%	1,11%	1,25%	-2,48%	-2,30%
Employer-Contracted Plan	0,85%	2,37%**	0,97%	1,16%	1,33%	1,05%	0,14%
Constant	5,83%***	3,26%***	2,36%***	2,65%***	2,37%***	5,35%***	4,90%***
Cancer							
Individual Coverage	-0,00%	-0,30%*	0,02%	1,19%	0,86%	2,96%*	1,44%
Employer-Contracted Plan	0,17%	-0,08%	-0,10%	0,02%	-0,99%	1,76%	1,27%
Constant	-0,00%	0,30%*	0,28%	0,65%*	1,53%***	1,48%*	2,37%**
Chronic Renal Disease							
Individual Coverage	-0,24%	-0,08%	0,14%	-0,02%	-0,60%	0,51%	0,23%
Employer-Contracted Plan	-0,24%	-0,23%	-0,27%	-0,59%	-1,16%	-0,23%	1,99%
Constant	0,24%	0,47%*	1,37%**	1,92%***	2,17%***	2,05%**	1,64%*
Cirrhosis							
Individual Coverage	0,00%	-0,00%	-0,14%	0,20%	0,46%	0,39%	0,00%
Employer-Contracted Plan	0,00%	0,12%	-0,05%	-0,09%	0,07%	0,46%	0,00%
Constant	0,00%	0,00%	0,14%	0,09%	0,30%	-0,00%	0,00%
Depression							
Individual Coverage	0,21%	0,02%	-0,14%	1,13%	-0,70%	-0,14%	4,42%
Employer-Contracted Plan	-0,22%	0,31%	-0,84%	-1,24%	-0,35%	1,04%	2,03%
Constant	0,44%*	1,85%***	4,25%***	6,05%***	6,74%***	6,89%***	5,42%***
Diabetes							
Individual Coverage	-0,16%	0,13%	-1,04%	-1,28%	-0,12%	-1,83%	-1,12%
Employer-Contracted Plan	-0,16%	0,27%	-0,81%	-2,04%**	0,45%	-3,90%	-3,35%
Constant	0,16%	0,26%*	1,58%***	4,21%***	6,71%***	14,93%***	18,15%***
Heart Disease							
Individual Coverage	-0,73%*	-0,27%	0,80%	1,69%	0,13%	-2,57%	5,42%
Employer-Contracted Plan	0,16%	0,14%	0,65%	-0,76%	-0,56%	-0,88%	3,78%
Constant	0,73%*	0,58%**	1,12%**	4,17%***	7,69%***	12,88%***	18,59%***
Hypertension							
Individual Coverage	-0,47%*	0,77%	-0,07%	0,19%	-0,57%	-0,94%	1,29%
Employer-Contracted Plan	-0,27%	0,28%	-0,60%	-0,41%	-0,64%	-4,77%	3,29%
Constant	0,47%*	1,49%***	6,81%***	17,98%***	31,67%***	44,99%***	49,23%***
Lumbar Pain							
Individual Coverage	1,18%	7,30%***	3,01%	6,33%*	1,34%	4,12%	10,79%*
Employer-Contracted Plan	0,21%	3,01%***	1,79%	3,83%*	3,76%	3,97%	6,19%
Constant	1,25%***	4,84%***	10,88%***	17,66%***	25,09%***	28,39%***	27,75%***
Tendonitis							
Individual Coverage	0,45%	2,92%	6,10%***	0,10%	5,47%**	3,13%	1,57%
Employer-Contracted Plan	0,35%	2,39%***	4,03%***	4,94%***	6,94%***	1,27%	2,70%
Constant	0,83%**	2,77%***	3,85%***	5,43%***	4,14%***	5,70%***	2,33%**
Tuberculosis							
Individual Coverage	0,00%	-0,12%	-0,10%	-0,03%	-0,12%	-0,45%	-0,64%
Employer-Contracted Plan	0,00%	-0,12%	-0,24%	0,06%	0,51%	-0,45%	-0,25%
Constant	0,00%	0,12%	0,33%	0,32%	0,12%	0,45%	0,64%
<i>Subpopulation Observations</i>	3.389	3.582	2.339	2.476	2.005	1.047	850
<i>Expanded Subpop. Size</i>	2.690.826	2.846.343	1.854.340	1.944.615	1.561.537	812.030	643.722

Note: Survey-adjusted OLS regressions; full sample used in all regressions (384.154 observations representing 177.038.067 individuals). Dependent variable: each of the 12 types of health problems; independent variables: individual and Employer-Contracted plan dummies and a constant term. Robust (linearized) standard errors, which incorporate the survey design, were used in the significance tests; * indicates significance at the 5% level; statistically positive dummy coefficients are shadowed.