

Advancing Health Equity in Health Care

Physician Billings for Chronic Obstructive Pulmonary Disease

Highlights

- Physician billings for chronic obstructive pulmonary disease (COPD) are unchanging over time for the general population.
- The inequality gap is high and showing signs of increasing over time for the general population.
- The Disparity Rate Ratio is significantly increasing over time.
- The gap between those living in areas of highest and lowest deprivation is widening.
- From 1996 to 2009, 48% of physician billings for COPD occurred for people living in the highest areas of deprivation, compared to 5% in the areas of lowest deprivation.
- Click [here](#) to learn more about data sources and methods.

Between January 1, 1996 and December 31, 2009 there were 74,929 COPD physician billings for Saskatoon residents. There were 35,854 among men and 39,075 physician billings among women. In the city as a whole COPD rates decreased by 22% from 26.7 to 20.9 cases per 1000 people between 1996 and 2009 (Figure 1 and Figure 2). Figure 3 shows the disparity rate ratio and disparity rate difference for age and sex standardized COPD rates. The disparity rate ratio increased by 49% from 6.2 in 1996 to 9.3 in 2009. The disparity rate difference decreased by 6% from 40.4 in 1996 to 38.1 in 2009.

Figure 1: Crude Chronic Obstructive Pulmonary Disease (COPD) Physician Billings Rate per 1000 Population by Quintile of Deprivation, Saskatoon, 1996 to 2009.

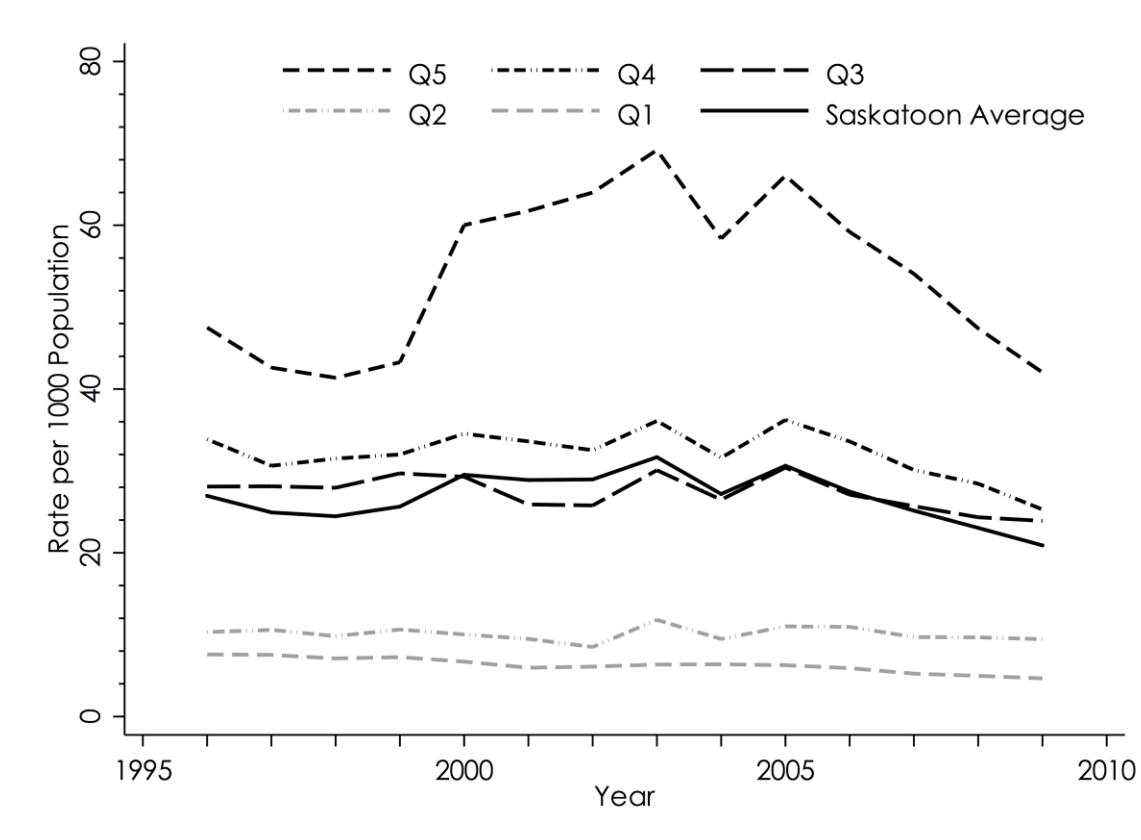
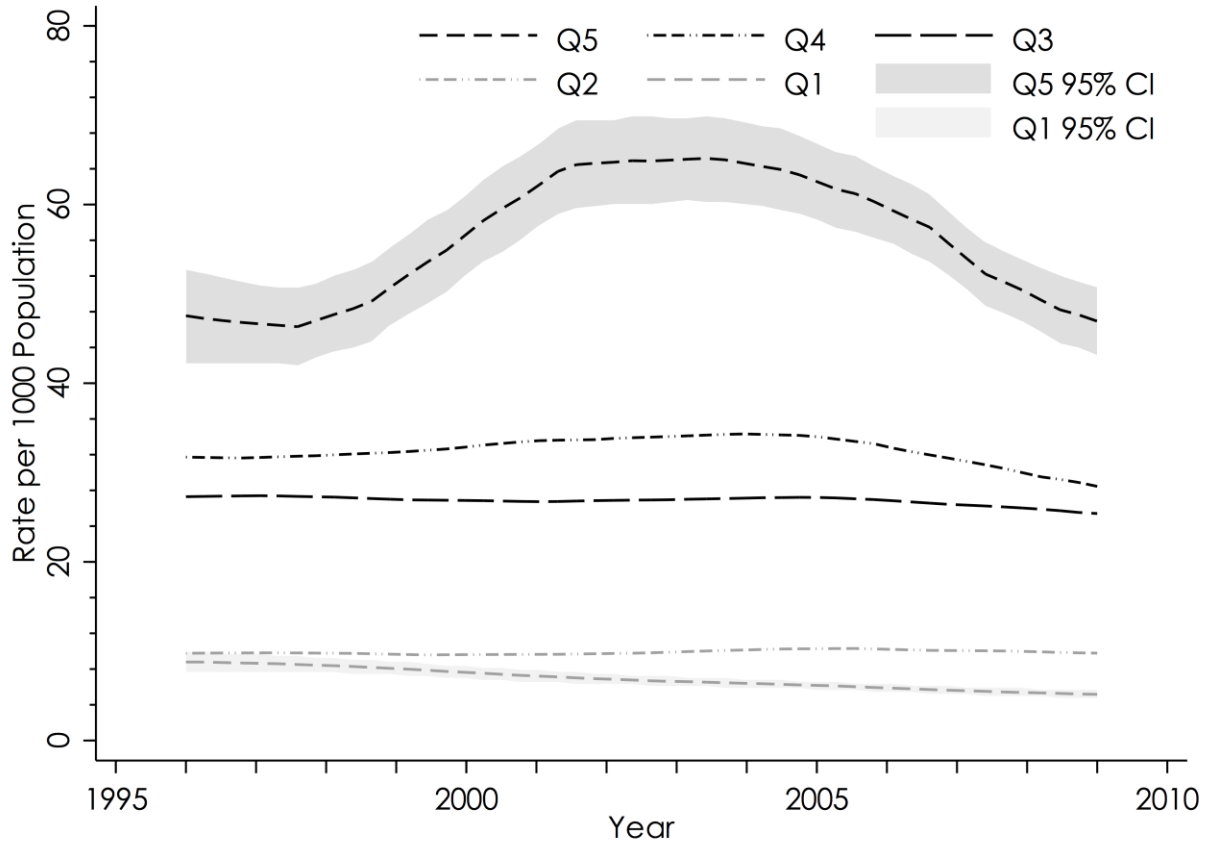
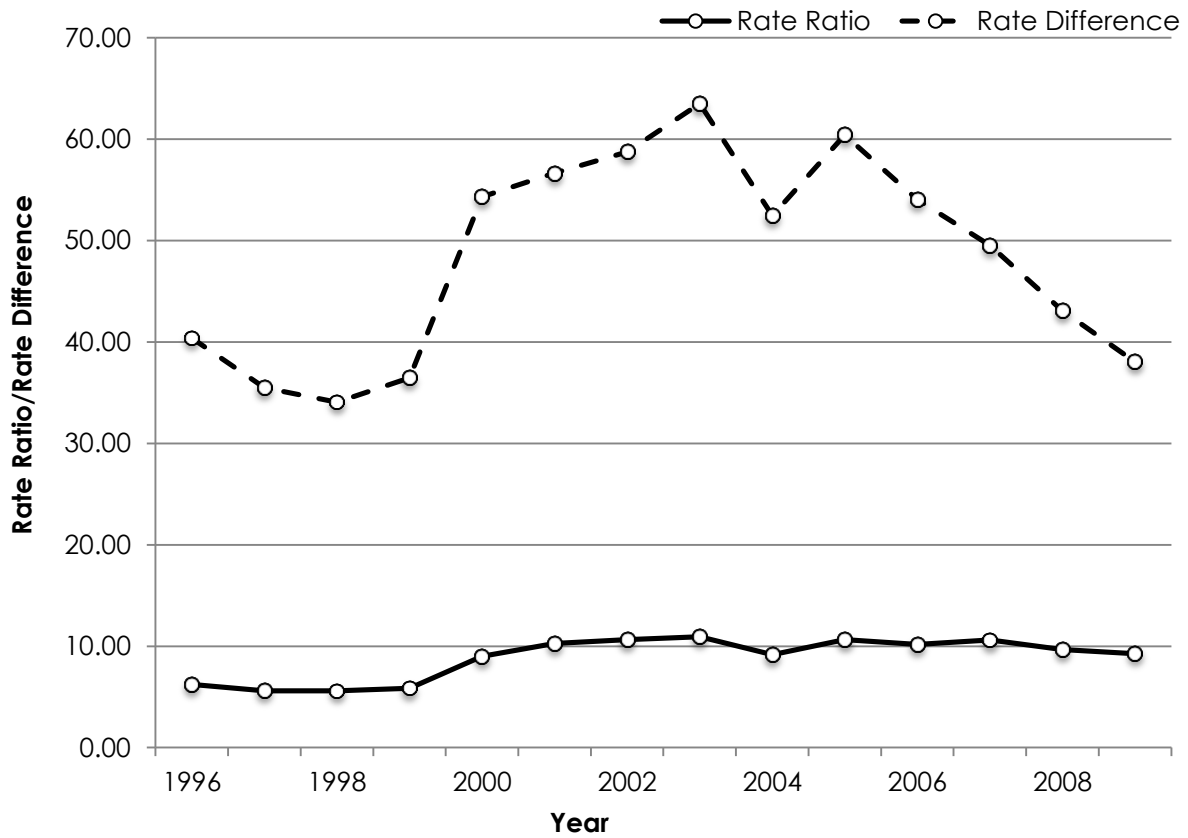


Figure 2: Adjusted Chronic Obstructive Pulmonary Disease (COPD) Physician Billing Rate per 1000 Population by Deprivation Area, Saskatoon, 1996 to 2009.



Note: Model is a negative binomial regression and includes age, sex, year, quintile of deprivation and a year*quintile of deprivation interaction term as dependent variables. The model is offset by the log of population size and robust standard errors were estimated.

Figure 3: Age and Sex Standardized Chronic Obstructive Pulmonary Disease (COPD) Physician Billings Rate Ratio and Rate Differences between the Highest and Lowest Quintiles of Deprivation, Saskatoon, 1996 to 2009.



The Lorenz curve for all years combined shows that 48% of COPD physician billings occurs among residents in areas of highest deprivation, representing 23% of the total population of Saskatoon (Figure 4). In contrast, 5% of COPD physician billings occurs among those residing in areas of least deprivation, representing 24% of the population.

Figure 4: Age and Sex Adjusted Lorenz Curve for Chronic Obstructive Pulmonary Disease (COPD) Physician Billings, Saskatoon, 1996 to 2009.

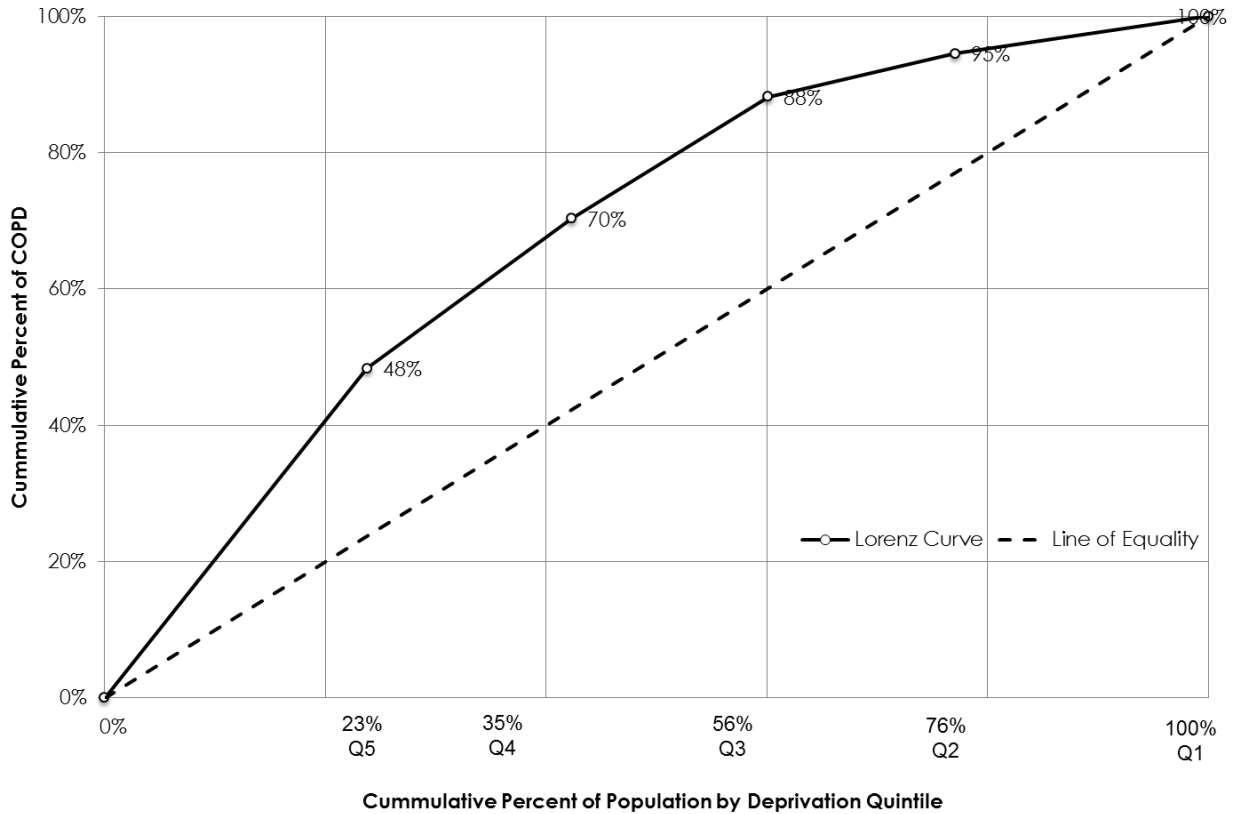


Figure 5 shows that the Gini coefficient for COPD physician billings was 0.32 (95% CI: 0.30 to 0.35) in 1996 and increased to 0.37 (95% CI: 0.34 to 0.40) in 2009. A Gini coefficient ranging from 0.41 to 0.31 represents a high degree of inequality for COPD physician billings in Saskatoon.

Figure 5: Age and Sex Adjusted Gini Coefficients for Chronic Obstructive Pulmonary Disease (COPD) Physician Billings, Saskatoon, 1996 to 2009.

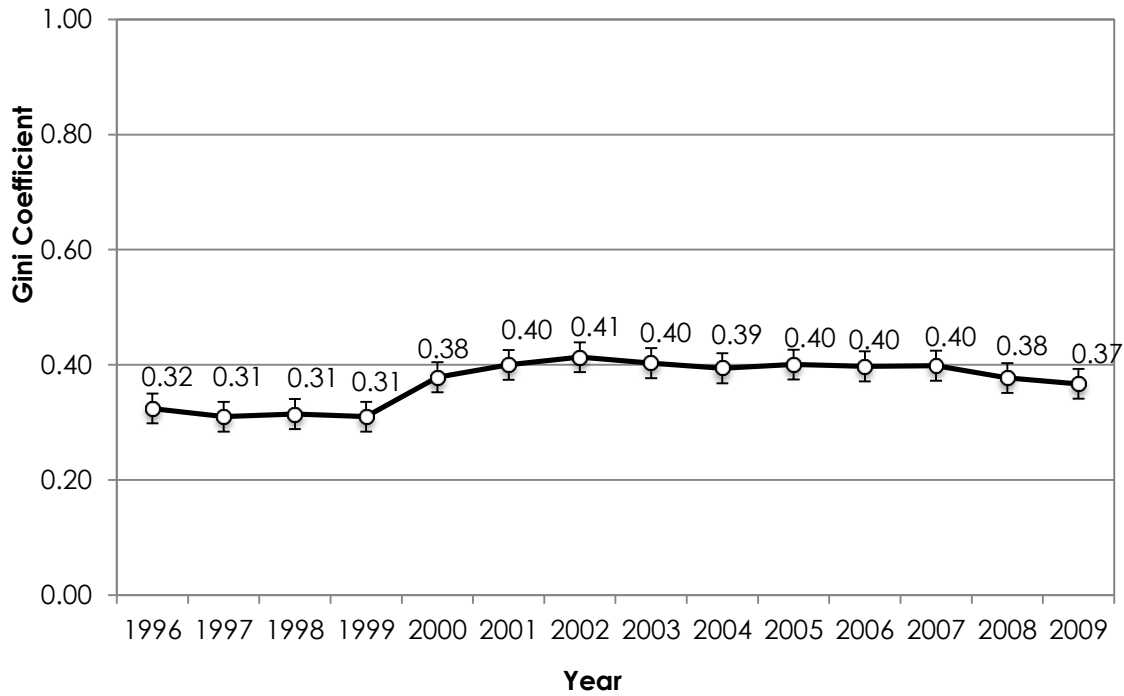


Table 1: Chronic Obstructive Pulmonary Disease (COPD) Physician Billings Rate Ratios for Sex, Age, Quintile of Deprivation, Saskatoon, 1996 and 2009.

COPD	Robust					
Rates	RR	Std. Err.	z	P>z	[95% Conf. Interval]	
Sex						
Male	1.00	-	-	-	-	-
Female	0.93	0.02	-3.07	0.00	0.89	0.97
Age Category						
0 to 14	1.00	-	-	-	-	-
15 to 29	0.51	0.01	-30.16	0.00	0.49	0.53
30 to 44	0.57	0.01	-21.61	0.00	0.54	0.60
45 to 64	0.67	0.02	-16.79	0.00	0.64	0.70
65+	0.94	0.05	-1.27	0.21	0.84	1.04
Deprivation Quintiles						
Q5	1.00	-	-	-	-	-
Q4	0.86	0.11	-1.10	0.27	0.67	1.12
Q3	0.76	0.08	-2.49	0.01	0.62	0.94
Q2	0.30	0.03	-10.64	0.00	0.24	0.38
Q1	0.21	0.05	-6.30	0.00	0.13	0.35
Year						
1996	1.00	-	-	-	-	-
1997	0.94	0.14	-0.43	0.67	0.70	1.26
1998	0.90	0.13	-0.73	0.47	0.67	1.20
1999	0.90	0.14	-0.69	0.49	0.66	1.22
2000	1.26	0.16	1.80	0.07	0.98	1.62
2001	1.26	0.16	1.85	0.06	0.99	1.62
2002	1.31	0.16	2.18	0.03	1.03	1.68
2003	1.47	0.18	3.14	0.00	1.16	1.87
2004	1.25	0.16	1.78	0.08	0.98	1.59
2005	1.40	0.17	2.73	0.01	1.10	1.78
2006	1.31	0.16	2.27	0.02	1.04	1.65
2007	1.18	0.14	1.40	0.16	0.94	1.50
2008	1.01	0.13	0.05	0.96	0.79	1.29
2009	0.91	0.11	-0.80	0.42	0.71	1.15

Note: Model is a negative binomial regression and includes age, sex, year, quintile of deprivation and a year*quintile of deprivation interaction term as dependent variables. The model is offset by the log of population size and robust standard errors were estimated.