

Advancing Health Equity in Health Care

Physician Billings for Stroke

Highlights

- Physician billings for stroke are decreasing over time for the general population.
- The inequality gap is high and showing signs of increasing over time for the general population.
- From 1996 to 2009, 52% of physician billings for stroke occurred for people living in the highest areas of deprivation, compared to 8% 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 4,015 stroke physician billings for Saskatoon residents. There were 2,029 stroke physician billings among men and 1,986 among women. In the city as a whole stroke physician billings rates decreased by 27% from 1.6 to 1.2 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 stroke rates. The disparity rate ratio increased by 27% from 4.9 in 1996 to 6.2 in 2009. The disparity rate difference decreased by 13% from 2.6 in 1996 to 2.3 in 2009.

Figure 1: Crude Stroke Physician Billings Rate per 1000 Population by Quintile of Deprivation, Saskatoon, 1996 to 2009.

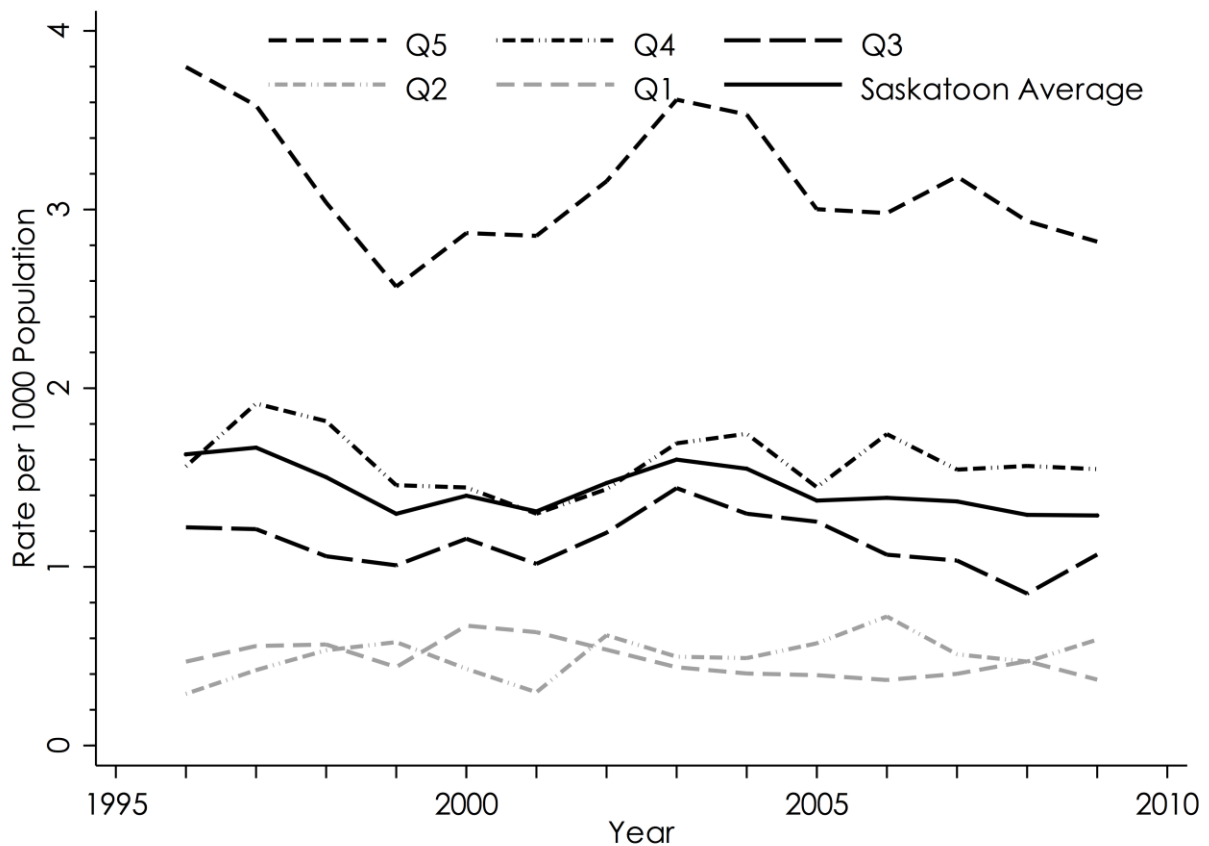
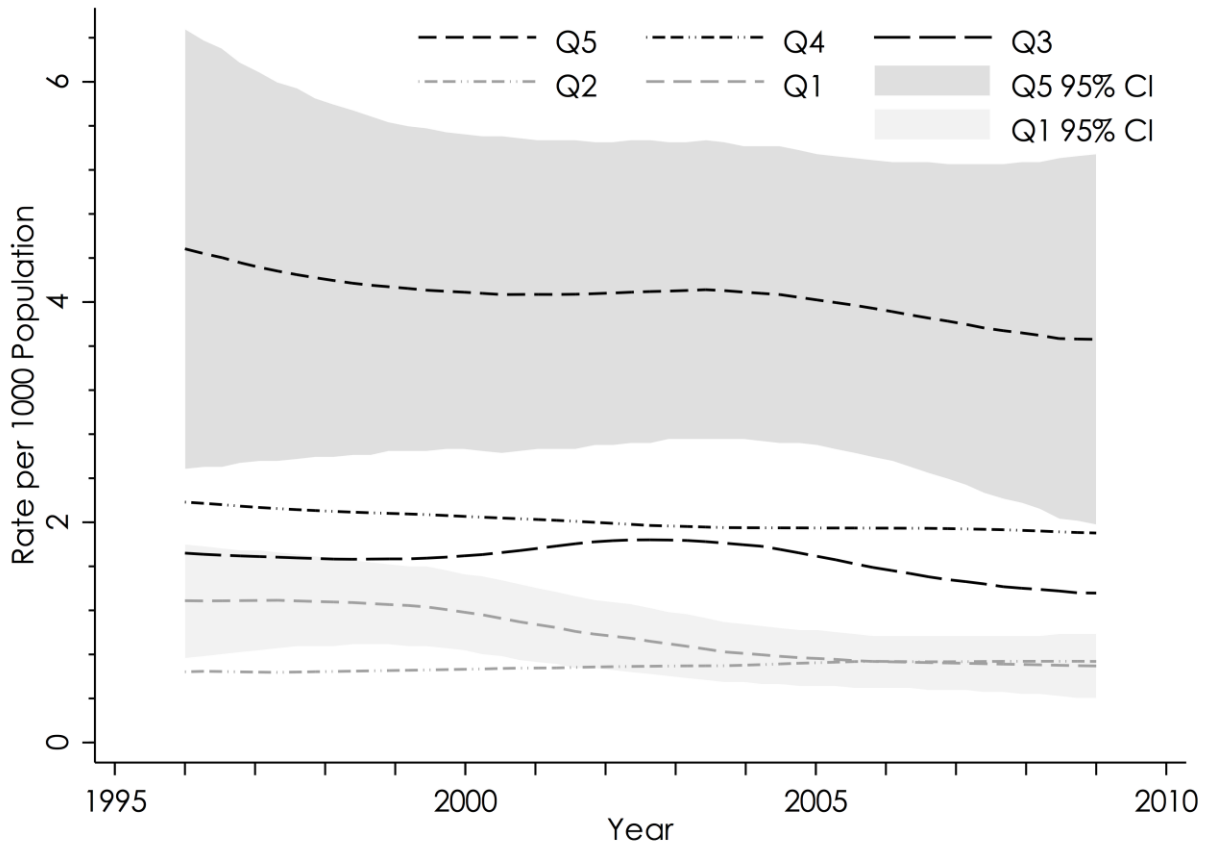
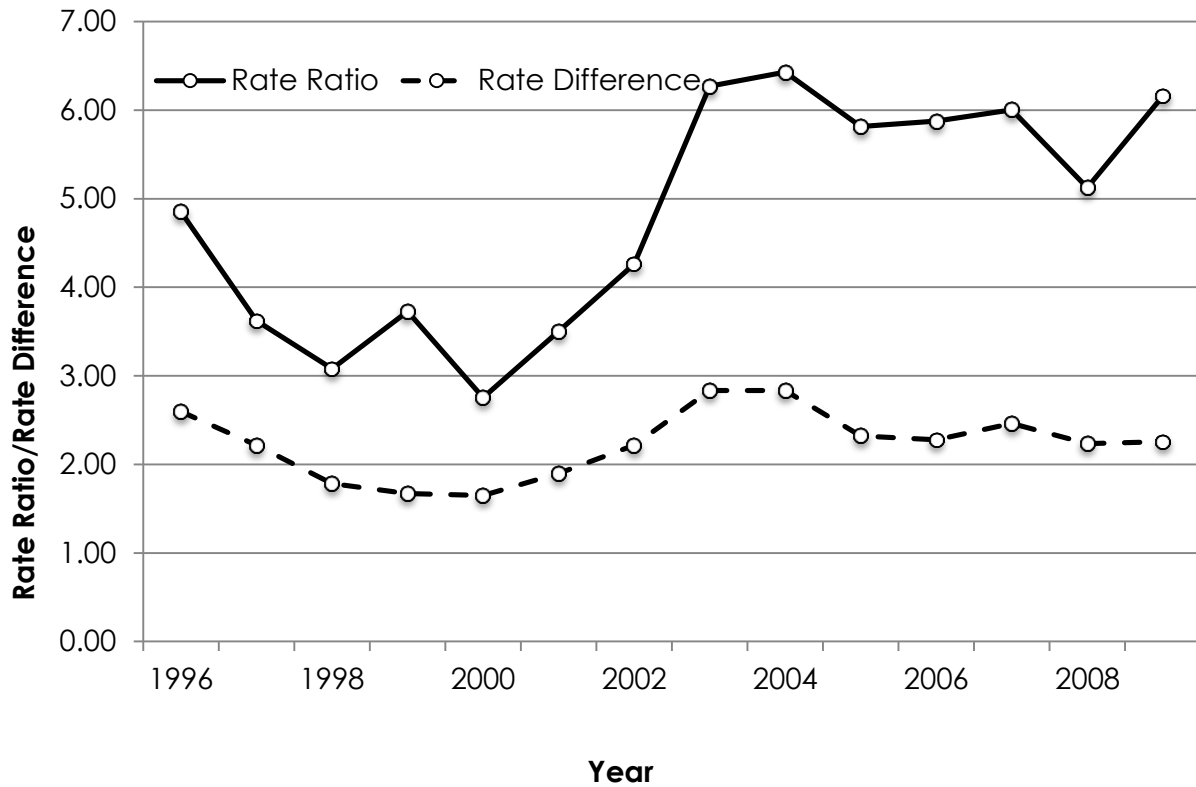


Figure 2: Adjusted Stroke Physician Billing Rate per 1000 Population by Deprivation Area, Saskatoon, 1996 to 2009.



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 Stroke 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 52% of stroke physician billings occurs among residents in areas of highest deprivation, representing 24% of the total population of Saskatoon (Figure 4). In contrast, 8% of stroke physician billings occurs among those residing in areas of least deprivation, representing 23% of the population.

Figure 4: Age and Sex Adjusted Lorenz Curve for Stroke Physician Billings, Saskatoon, 1996 to 2009.

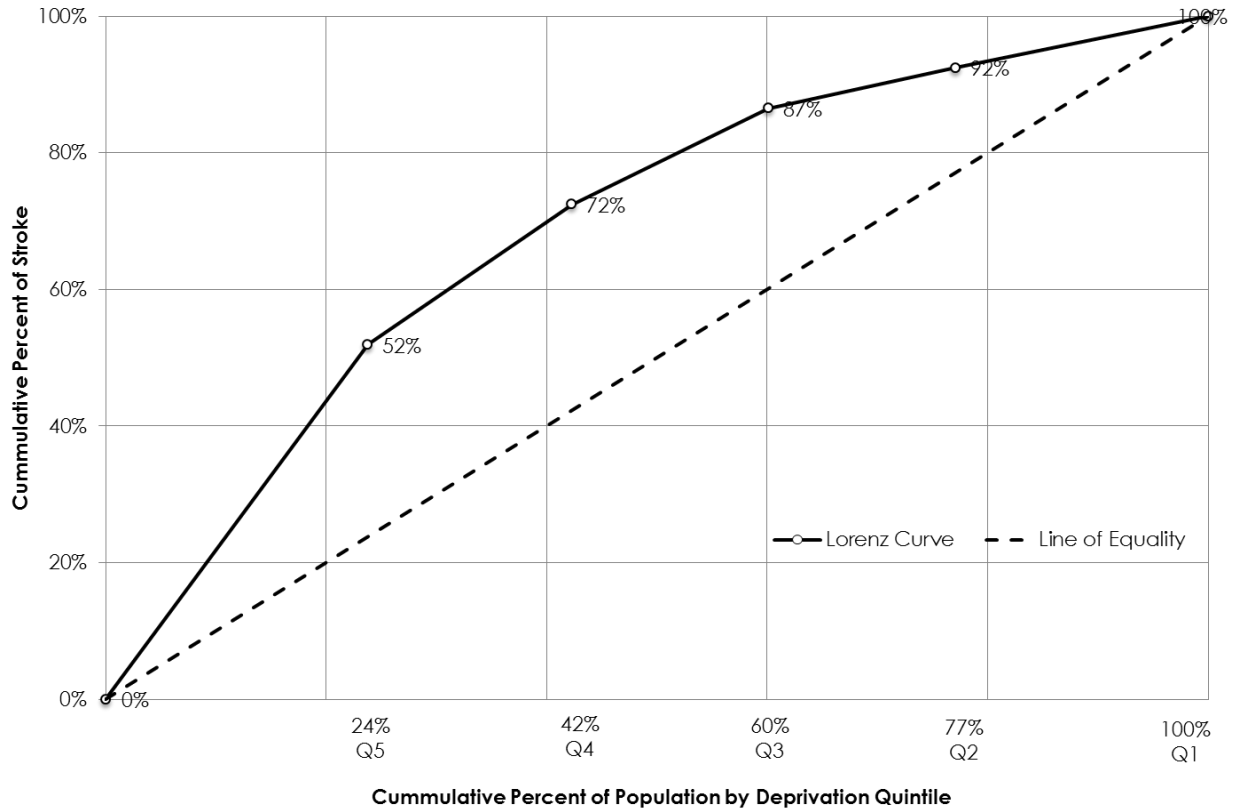


Figure 5 shows that the Gini coefficient for stroke physician billings was 0.42 (95% CI: 0.40 to 0.44) in 1996 with a decrease to 0.38 (95% CI: 0.36 to 0.41) in 2009. A Gini coefficient ranging from 0.42 to 0.33 represents a high degree of inequality for stroke physician billings in Saskatoon.

Figure 5: Age and Sex Adjusted Gini Coefficients for Stroke Physician Billings, Saskatoon, 1996 to 2009.

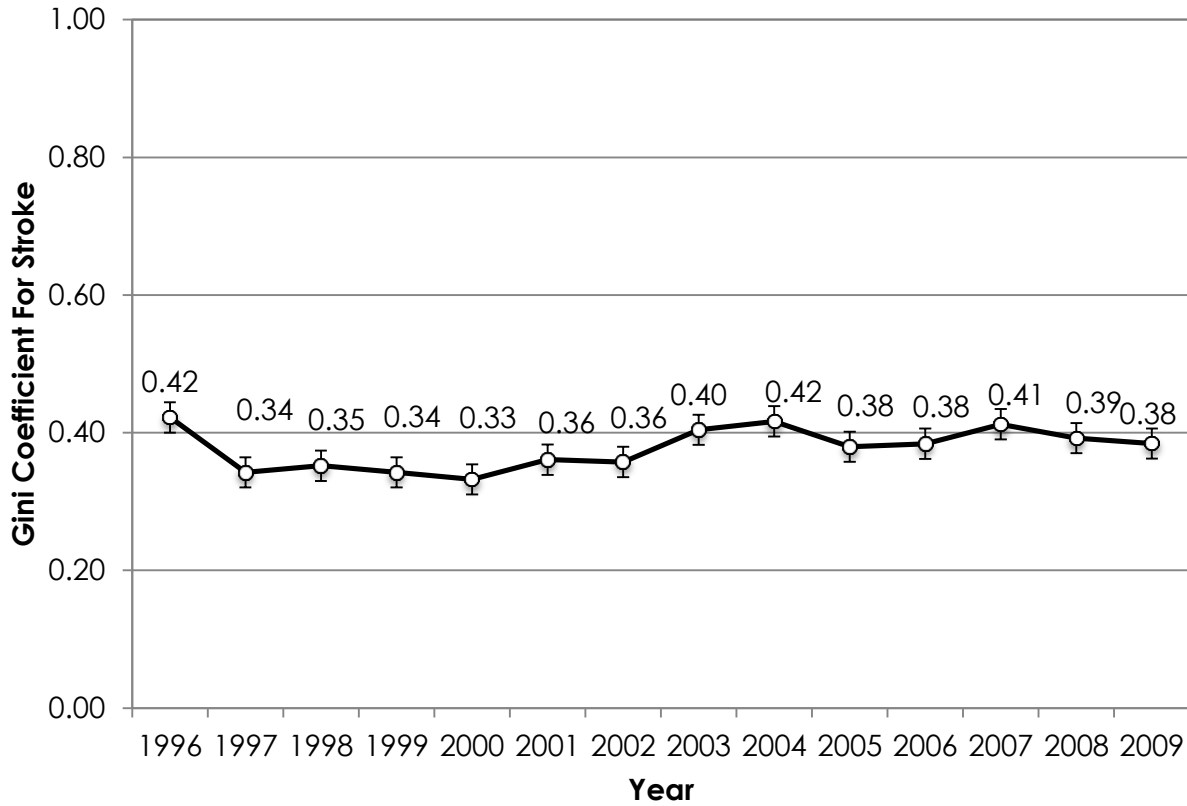


Table 1: Stroke Physician Billings Rate Ratios for Sex, Age, Quintile of Deprivation, Saskatoon, 1996 and 2009.

Stroke Rates	RR	Robust Std. Err.	z	P>z	[95% Conf. Interval]	
Sex						
Male	1.00	-	-	-	-	-
Female	0.52	0.02	-13.91	0.00	0.48	0.57
Age Category						
0 to 14	1.00	-	-	-	-	-
15 to 29	2.28	0.51	3.72	0.00	1.48	3.52
30 to 44	7.19	1.51	9.42	0.00	4.77	10.85
45 to 64	39.30	7.81	18.46	0.00	26.61	58.02
65+	245.85	47.95	28.23	0.00	167.75	360.31
Deprivation Quintiles						
Q5	1.00	-	-	-	-	-
Q4	0.53	0.14	-2.39	0.02	0.31	0.89
Q3	0.67	0.11	-2.50	0.01	0.49	0.92
Q2	0.17	0.06	-4.93	0.00	0.08	0.34
Q1	0.41	0.13	-2.88	0.00	0.22	0.75
Year						
1996	1.00	-	-	-	-	-
1997	0.95	0.15	-0.34	0.74	0.70	1.28
1998	0.77	0.07	-2.86	0.00	0.64	0.92
1999	0.65	0.07	-4.30	0.00	0.53	0.79
2000	0.74	0.12	-1.86	0.06	0.54	1.02
2001	0.72	0.14	-1.63	0.10	0.49	1.07
2002	0.81	0.13	-1.30	0.19	0.59	1.11
2003	0.89	0.13	-0.83	0.41	0.67	1.17
2004	0.89	0.20	-0.54	0.59	0.57	1.37
2005	0.71	0.09	-2.78	0.01	0.55	0.90
2006	0.66	0.09	-2.87	0.00	0.50	0.88
2007	0.73	0.14	-1.69	0.09	0.50	1.05
2008	0.66	0.11	-2.51	0.01	0.48	0.91
2009	0.65	0.15	-1.88	0.06	0.41	1.02

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.