



CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

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Project Title Trends in Hospital Admissions: The Epidemic of Diabetes Mellitus and its Comorbidities in California, 2000-2010	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this study was to determine trends in prevalence and comorbidities of diabetes mellitus (Type 1 & 2) by employing hospital admissions (episodes) in California from 2000 to 2010. The hypothesis was that the prevalence and comorbidities of diabetes mellitus would increase from 2000 to 2010.</p> <p>Methods/Materials Diagnoses of more than 32.2 million hospital admissions from 2000 to 2010 in California, compiled by OSHPD, were screened by employing ICD9CM codes specific to diabetes to identify episodes in diabetes. Trends were evaluated using simple linear regressions.</p> <p>Results Approximately 6.3 million hospital admissions where diabetes was a principal diagnosis or subsequent diagnosis were identified during 2000-2010. Compared to year 2000 (16.1%), the prevalence of diabetes-associated episodes increased significantly by 41% in 2010 (22.8%), demonstrating that the epidemic is increasing with a positive trend ($p < 0.0001$). In 2010, among all hospitalizations, excluding newborns and length of stay more than 30 days, the most prevalent comorbidities were essential hypertension (48%), disorders of lipid metabolism (46%), and coronary atherosclerosis and other heart disease (34%). Significant trends ($p < 0.0001$) were observed from year 2000 to 2010 for chronic renal failure (4.5 times), acute and unspecified renal failure (2.3 times), and disorders of lipid metabolism (1.9 times). Costs to diabetics were almost \$45 billion in 2010, compared to \$14 billion in 2000, representing a 229% increase ($p < 0.0001$).</p> <p>Conclusions/Discussion The hypothesis was supported. This study reveals increasing trends in prevalence, deadly consequences, and ever-increasing hospital costs to pay for California's diabetes epidemic. The financial burden on the public is increasing every year. It cost \$45 billion in 2010, posing a grave threat to an already vulnerable economy in California. By increasing awareness and education, regular exercise, changing life styles, and proper medical monitoring and care, we can keep diabetes from engulfing our state and the nation.</p>	
Summary Statement This project describes the increasing trends in diabetes, diabetes-related hospitalizations, deadly health consequences, and financial burden to the society.	
Help Received Ms. Marilu Carter edited my writing. My dad helped me to access the data and to write the SAS programs.	