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Hospitalizations for diabetes in Brazil – estimations of expenditures based on population attributable risk methodology

R Roger[*,†], M Schmidt[*,†], B Duncan[*,†] and S Mengue[*]

[*]Federal University of Rio Grande do Sul (UFRGS), Graduate Studies Program in Epidemiology (PPGEpi), Porto Alegre – RS, Brazil, [†]Federal University of Rio Grande do Sul (UFRGS), Social Medicine Dept., Porto Alegre – RS, Brazil

Background: Studies of the economic impact of diabetes mellitus in Brazil are scarce.

Aims: To estimate hospitalizations and resultant expenditures for diabetes from the payment perspective of the Brazilian National Health System (SUS).

Methods: Data from 37 million hospitalizations (1999–2001) were extracted from the Brazilian National Hospital Information System (SIH-SUS), the governmental payment database. Hospitalizations with a first-listed diagnosis of diabetes were complemented with hospitalizations estimated to be due to diabetes by attributable risk methodology. Estimations were based on diabetes prevalence in Brazil and on relative risks of hospitalization for chronic complications and general medical conditions for diabetic subjects obtained from the literature. Expenditure values represented reimbursement for staff, diagnostic and therapeutic procedures, materials and drugs. Population numbers were obtained from the national census bureau.

Results: An estimated 836 300 (49.3/10,000) diabetes hospitalizations totaling US$243.9 million (US$14 400/10 000) occurred annually (2.2% of the total Ministry of Health budget). Diabetes as first-listed diagnosis comprised only 13.1% of these hospitalizations; chronic complications, 41.5%; and general medical conditions, 45.4%. The corresponding expenditures were 6.7%, 51.4% and 41.9%, respectively. The average expenditure for hospitalizations attributable to diabetes (US$292) was 36% higher than that for those not attributable. Cardiovascular diseases were first in quantity (27%) and expenditures (37%) among hospitalizations attributable to diabetes. Men were less frequently admitted (48%) than women, but incurred greater expenditures (53%). The 45–64 year old age group generated the largest percentages of hospitalizations (45%) and expenditures (48%), while the 75 + age group generated the highest coefficients of hospitalization (350/10 000) and per capita expenditures (US$93 400/10 000). Hospitalizations in Brazil's most developed regions represented nearly twice the per capita expenditures of those of other regions.

Conclusions: Governmental expenditure for diabetes hospitalization was significant, with important regional inequalities. Attributable risk methodology discloses major expenditures for diabetes not apparent when using only first listed diagnoses.