Chronic illnesses are one of the largest challenges in the health system due to the number of patients, increased contributions to mortality, frequent premature disability and high-cost treatment (Córdova-Villalobos, et al. 2008).

In this scheme diabetes has a relevant presence. The World Health Organization (WHO) considers diabetes mellitus as a global health threat (SSA, 2008). In Mexico diabetes has been a public health problem since the second half of the 20th century because of its growing incidence, prevalence and as a cause of death. The mortality rate (deaths for every 100,000 inhabitants) for diabetes was 2.5 in 1922, increased to 4.2 in 1940, 4.8 in 1950, in 1990 this number increased to 30.8, reaching 46.8 in the year 2000 and 62 were estimated in 2007 (Rull, 2006; SSA, 2008). Projections estimate 11.7 million people will suffer from diabetes in 2025. Globally, Mexico will occupy the 7th place in the number of people with diabetes (King, 1998).

Poorly controlled diabetes can cause fatigue, loss of weight, functional disability among other ills and symptoms. Long term complications include blindness, chronic renal disease and neuropathies. The rate of heart attacks, cardiac arrests and renal failure grows two-fold and the risk of blindness increases to 40% in older people with diabetes (Pompei, 2006). Complications found in people older than 40 years old with diabetes type II are: 15.6% diabetic retinopathy, 14.9% neuropathy, 1.2% heart attacks and 1.1% requiring renal dialysis caused by nephropathy (Jiménez-Corona, 2010).

According to predictions of diabetes mellitus, Reynoso et. Al. (2011), data resulting from National Survey of Health and Nutrition 2006 and the UKPDS (United Kingdom Prospective Diabetes Study) model, projected the incidence of complications, life
expectancy and mortality related to diabetes in the next decades. Due to diabetes in 2026, 25.9% will suffer heart attacks, 11.2% heart failure, 10.1% ischemic stroke, 6.2% amputation and 53.8% death. Regarding the diabetes projections in Mexico, it is estimated that by 2030, one out of every 5 men 60 years old and one out of every 4 70 years old will suffer from diabetes mellitus. While in women, one out of 4 60 years old will be diagnosed with diabetes and one out of 5 85 years old will have the disease (Gloria, 2012).

Recent work related to expenditure of diabetes show that in Mexico, the total number of diabetes related deaths is 66,985. The number of people who have diabetes and permanent disability is estimated at 178,187, which reflects into 3,114,367 lost productive years, these two amounts give the result of indirect expenses estimated at 13,144,100 (Barceló y cols,2003). Direct estimated costs for medication are 765,200,000 and 215,000 hospitalizations. Ambulatory services are estimated at 4,871,200 doctor visits at a cost above 121,800,000USD. Arredondo y cols (2001;2005) have found a range of average costs ranging from 613 to 887USD, data for Health Department (Secretaría de Salud) and IMSS, respectively.

Recent estimates suggest high growth in the incidence and prevalence of diabetes, disabilities for that cause, years of productive life lost, and mortality. In turn, these increases cause huge indirect costs that affect the overall economy. Also the direct costs of medical care, medication and hospitalization are of the highest magnitude.

The main objective of this work is to depict the demographic and epidemiological profile of diabetes in adult age (20 years of age and older), as the basis evaluate the economic expenses of diabetes and their financial implications, as well as exploring projections of expenses of medical attention to this disease in Mexican adult population.

**Methodology**

Three National Health and Nutrition Surveys were used in this paper between the years 2000, 2006 and 2012 (Olaiz-Fernández, 2006), (INSP, 2012). These surveys are national
and state-wide representative, with a probabilistic sampling design, multistage, stratified and by conglomerates. Many basic aspects were kept, such as questionnaire type, methods of data gathering, population study and the sampling design that would allow them to be compared. An adult questionnaire was administered to 45,294 in 2000, 33,366 in 2006 and 46,303 in 2012 subjects 20 years of age and older. The information used in this paper corresponds to questions asked in the diabetes section. The main variables are medical diagnosis of this particular ailment, date of diagnosis, actual treatment control and presence of complications.

The public sector accounts for more than 80% of total healthcare in Mexico. Medical office data from 2011 was analyzed, as well as diabetes hospital discharges from 2011 in the three main health institutions in Mexico: Instituto Mexicano del Seguro Social (IMSS), Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (ISSSTE) y Secretaría de salud (SSA).

Expenditure in the attention to diabetes mellitus was estimated on a population 20 years of age and older, starting from the information from the applied budget in the national environment weighted by indicators derived from the production of these services. Finally, simulations were done starting from the estimated expenditure considering different projection scenarios of the illness. Statistical analysis was done in STATA 12.

**Preliminary Results**

The prevalence was similar in both genders during the three year study, from 53.2% in women in the year 2000, 55.3 in 2006 and 53.3 in 2012. Diagnostics has increased with time. In the year 2000 16.9% of adults 65 years of age and older had been diagnosed, six years later the proportion has grown to 17.4% and 25% in 2012. Differences are statistically significant among all the age groups nationwide.
In the year 2000 26.7% had had 5 years or less of being diagnosed, while 18.8% had been diagnosed between 6 and 10 years. In 2006 59.5% answered that they had lived up to 5 years of having being medically diagnosed.

In 2000 92.1% and 94.7% in 2006 of diabetics had medical treatment. More than 75% were treated with pills, nearly 7% in 2006 and 2012 treat themselves with insulin and another 7% receives treatment with both pills and insulin. The group which has declared not use medication was 8% in 2000, 4.3% in 2006 and 8.6% in 2012.

On the consequences of the disease, 39.5% declared that they felt burning sensations, pain and loss of sensitivity in the soles of their feet, 18.6% have had their sight diminished and 7.8% have totally lost their eye sight. Percentages are lower in amputations and dialysis.

2,705,357 hospital discharges from IMSS were analyzed, 4.7% had a diagnosis of diabetes mellitus (52.3 were women and 47.7% were men). Average hospitalization was slightly longer for men (5.9 days) in comparison to women (5.6 days). Median is for days for both sexes. We analyzed 389,544 hospital discharges from ISSSTE, 3.4% had a diagnosis of diabetes mellitus. Distribution by sex was as follows 49.2% in men and 50.8% women. Average hospitalization time at ISSSTE was 6.8 days for men and 5.8 for women.

120,953,126 medical office consultations at IMSS were analyzed, from which more that 11 million doctor consultations (9.43%) correspond to diabetes mellitus.

We estimated expenses in one medical office consultation were: 503.34 pesos in IMSS (approximately 39 USD), 372 pesos en ISSSTE (approximately 29 USD), 91 pesos in SSA (approximately 7 USD).

**Discussion**

Diabetes is recognized as one of the most important chronic diseases, diverse authors argue that part of this increase to the prevalence is due to the age composition of the population, paired to life styles and genetic factors (Aguilar-Salinas, 2012; Villapando, 2010). The
specific diabetes mellitus Action Program recognizes that prevention and control represent a challenge for the people in charge of the country's public health (SSA, 2008).

Regarding the diabetes projections in Mexico, it is estimated that by 2030, one out of every 5 men 60 years old and one out of every 4 70 years old will suffer from diabetes mellitus. While in women, one out of 4 60 years old will be diagnosed with diabetes and one out of 5 85 years old will have the disease (Gloria, 2012). Such is the challenge for the health system, as well as families and people themselves.