

DIABETES TREATMENT COST IN KSA USING A REAL-WORLD DATASET FROM PRIVATE PAYER

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OBJECTIVE

Diabetes is a prevalent non-communicable disease worldwide associated with high morbidity, mortality and a lower quality of life. KSA ranks 7 in the rate of diabetes worldwide with an estimated disease prevalence of around 24% ¹. The Kingdom is witnessing a worsening pattern of diabetes with 10-fold increase over the past 30 years resulting in significant financial burden on payers ². The aim of the study is to determine the cost of in-patient and out-patient diabetes pharmacotherapy in KSA.

METHOD

A retrospective analysis was done for the years 2018, 2019 and 2020 on all type 1 and type 2 diabetic patients using claims database obtained from a third-party administrator representing 30-40% of private insurance companies in Lebanon. The annual median drugs cost per patient were calculated for both inpatients and outpatients. Additionally, the drugs with both the highest cost and use were also calculated for the years 2018, 2019, and 2020.

RESULTS

A total of 118,631 patients were included in the cohort (85% male, 15% females) with a median age of 50 [42-57]. The median annual medication treatment cost per patient was 62.94 USD [23.42-185.54] in 2018, 86.18 USD[29.7-249.43] in 2019, and 118.1 USD [44.44-303.31] in 2020, showing an increase of 88%. Looking at in-patients Vs out-patient median annual cost per patient , the in-patient cost is three times the out-patient cost. While the latter increased by 87% from 2018 o 2020, the in-patient cost increased by 44% from 2018 to 2019 then decreased by 6.5% from 2019 to 2020.

At the cohort level, the most prescribed medications during the three years were Glimepiride, Metformin, Metformin + Glibenclamide and Metformin + Vildagliptin. The number of prescriptions increased markedly in 2020 knowing that the number of patients were less in 2020 compared to the previous year.

The annual cost of Metformin + Vildagliptin was the highest across the three years reaching up to 825,774 USD in 2020, though it was prescribed to only 4.8% of the patients. This was followed by glimepiride and Aspart accounting for 10.8% and 1% of the patients respectively.

CONCLUSION

The annual medication treatment cost per patient doubled between 2018 and 2020, with Metformin + Vildagliptin combination representing the medication with the highest annual cost. Private payers are incurring disproportionally higher costs for fewer number of patients, suggesting options for rationalization for better treatment coverage.

Table 1: Patients Demographics (N=118,631)

	2018	2019	2020
Total number of patients	44,603	58,260	55,111
Male (%)	85.87	84.59	86.29
Female (%)	14.13	15.41	13.71
Median Age	46	46	48
% of patient with microvascular complication	6.90	7.70	5.82
Type I Diabetes (%)	4.92	5.12	5.33
Type II Diabetes (%)	87.27	89.79	89.78
Inpatients (%)	0.20	0.16	0.08
Outpatients (%)	99.80	99.84	99.92

References:
1. Naeem Z. Burden of Diabetes Mellitus in Saudi Arabia. Int J Health Sci (Qassim). 2015;9(3):V-VI. doi:10.12816/0024690
2. Al Dawish MA, Robert AA, Braham R, Al Hayek AA, Al Saeed A, Ahmed RA, Al Sabaan FS. Diabetes Mellitus in Saudi Arabia: A Review of the Recent Literature. Curr Diabetes Rev. 2016;12(4):359-368. doi: 10.2174/1573399811666150724095130. PMID: 26206092.

Figure 1: Median Annual Medication Treatment Cost (USD) Per Patient

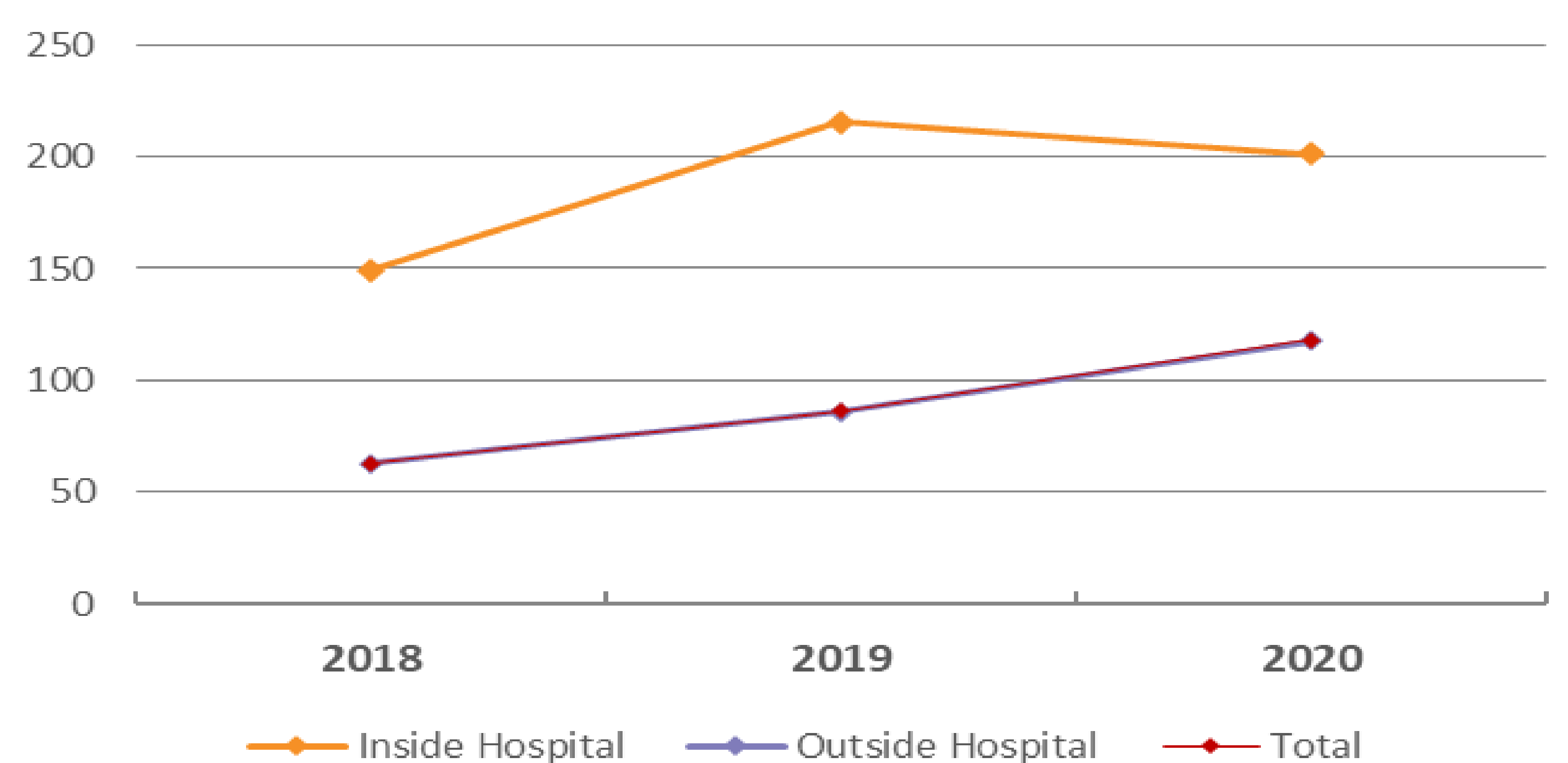


Figure 2: Ten Most Prescribed Medications Per Year

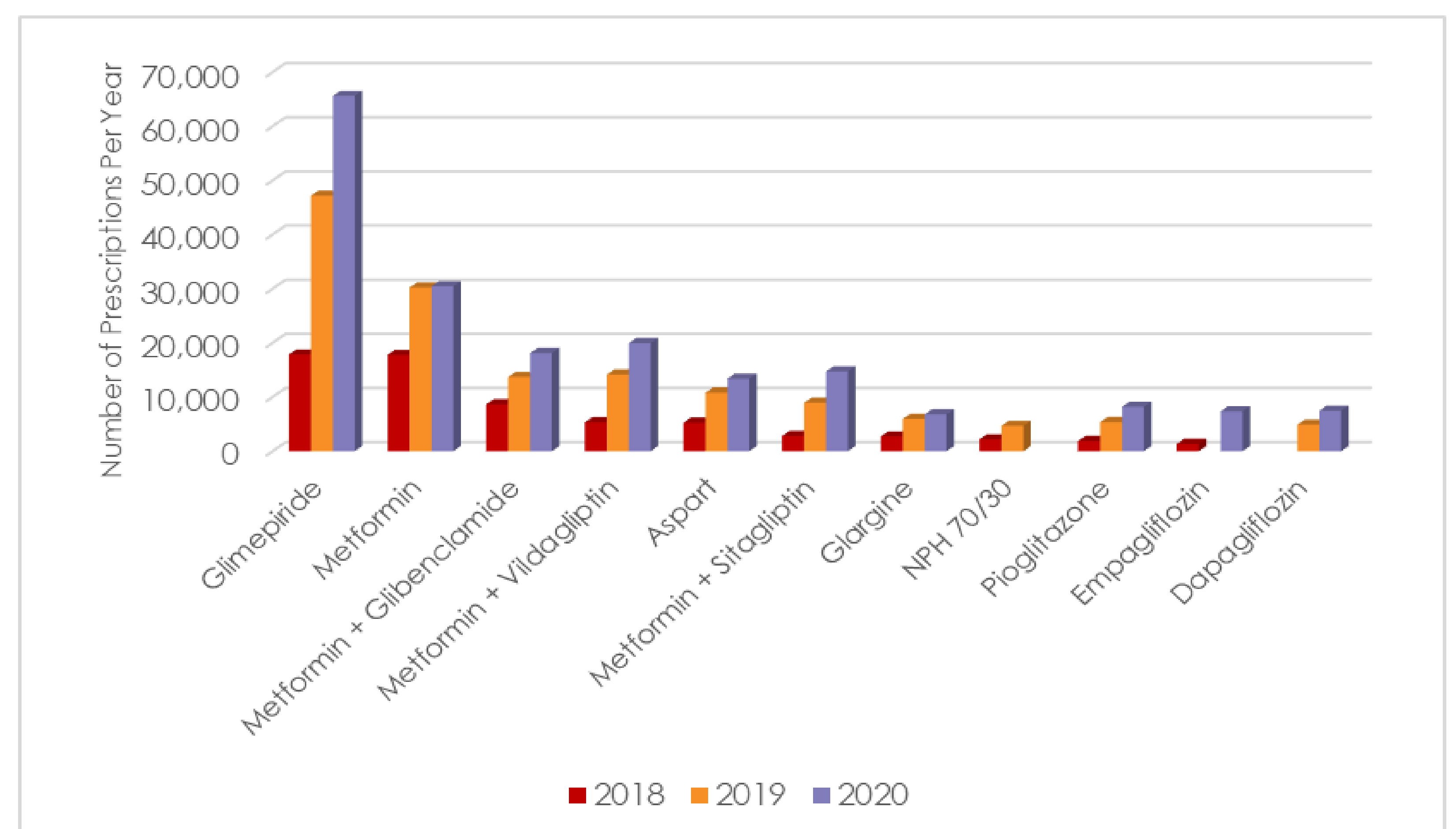


Table 2: Top Ten Medication With The Highest Annual Cost

Medication	Total Annual Cost (USD)
2018	
Metformin + Vildagliptin	218,582
Glimepiride	172,435
Aspart	172,427
Glargine	141,044
Metformin + Sitagliptin	110,462
Metformin	87,441
Empagliflozin	56,157
Dapagliflozin	50,506
Liraglutide	48,820
Metformin + Glibenclamide	47,796
2019	
Metformin + Vildagliptin	613,685
Glimepiride	455,160
Aspart	419,869
Metformin + Sitagliptin	355,490
Glargine	344,451
Dapagliflozin	202,415
Empagliflozin	177,613
Metformin	161,882
Liraglutide	152,367
Pioglitazone	108,817
2020	
Metformin + Vildagliptin	825,774
Glimepiride	641,023
Aspart	625,741
Metformin + Sitagliptin	588,023
Glargine	504,740
Empagliflozin	310,645
Dapagliflozin	295,603
Liraglutide	170,998
Pioglitazone	168,929
Degludec	160,822