Saxagliptin and Cardiovascular Outcomes in Patients with Type 2 Diabetes Mellitus (SAVOR- TIMI 53 trial)

NCT03936023

December 27, 2019

1. RCT Details

This section provides a high-level overview of the RCT that the described real-world evidence study is trying to replicate as closely as possible given the remaining limitations inherent in the healthcare databases.

1.1 Title

Saxagliptin and Cardiovascular Outcomes in Patients with Type 2 Diabetes Mellitus (SAVOR-TIMI 53 trial)

1.2 <u>Intended aim(s)</u>

The cardiovascular safety and efficacy of many current antihyperglycemic agents, including saxagliptin, a dipeptidyl peptidase 4 (DPP-4) inhibitor, are unclear. This trial was designed to evaluate the safety and efficacy of saxagliptin with respect to cardiovascular outcomes in patients with diabetes mellitus who are at risk for cardiovascular events.

1.3 Primary endpoint for replication and RCT finding

Composite of CV death, nonfatal myocardial infarction, or nonfatal ischemic stroke

1.4 Required power for primary endpoint and noninferiority margin (if applicable)

85% power to identify a 17% relative reduction of the primary end point with saxagliptin versus placebo and 98% power to test for noninferiority of saxagliptin versus placebo (reject the upper limit of 95% CI for an HR 1.3 at a 1-sided α of .025)

1.5 Primary trial estimate targeted for replication

HR = 1.00 (95% CI 0.89-1.12) comparing saxagliptin to placebo (Scirica et al., 2013)

2. Person responsible for implementation of replication in Aetion

Ajinkya Pawar, Ph.D. implemented the study design in the Aetion Evidence Platform. S/he is not responsible for the validity of the design and analytic choices. All implementation steps are recorded and the implementation history is archived in the platform.

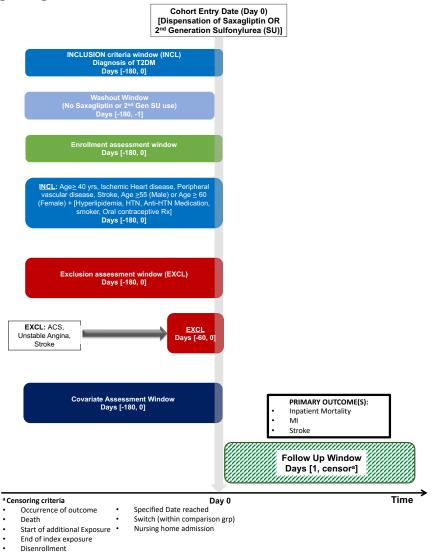
3. Data Source(s)

United/Optum, MarketScan, Medicare

4. Study Design Diagram

The study design diagram visualizes key aspects of the longitudinal study design for expedited review.

Design Diagram - SAVOR-TIMI 53 TRIAL REPLICATION



5. Cohort Identification

5.1 Cohort Summary

This study will involve a new user, parallel group, cohort study design comparing saxagliptin to the 2nd generation sulfonylurea (SU) antidiabetic class as a proxy for placebo. 2nd generation SUs are not known to have an impact on the outcome of interest. In addition, SUs were the most frequent background treatment in SAVOR-TIMI53 (after metformin), and DPP4i and SUs are preferentially prescribed to similarly older patients in real world (Patorno et al., 2019). The patients will be required to have continuous enrollment during the baseline period of 180 days before initiation of saxagliptin or a comparator drug (cohort entry date). Follow-up for the outcome (3P-MACE), begins the day after drug initiation. As in the trial, patients are allowed to take other antidiabetic medications during the study

5.2 Important steps for cohort formation

5.2.1 Eligible cohort entry dates

Market availability of saxagliptin in the U.S. started on July 31, 2009

- For Marketscan: July 31, 2009-Dec 31, 2017 (end of data availability).
- For Medicare: Jan 1, 2012-Dec 31, 2017 (start- end of data availability).
- For Optum: July 31, 2009-March 31, 2019 (end of data availability).

5.2.2 Specify inclusion/exclusion criteria for cohort entry and define the index date

Inclusion and exclusion criteria were adapted from the trial as closely as possible. Definitions for all inclusion/exclusion are provided in **Appendix A** and are summarized in the flowcharts below.

5.3 Flowchart of the study cohort assembly

	Optum	Truven	Medicare
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	Less Excluded Patients	Remaining Patients	Less Excluded Patients	Remaining Patients	Less Excluded Patients	Remaining Patients
All patients in the database		74,864,884		191,990,035		23,466,175
Patients who used exposure or a reference between 20 January 2010 to Dec 2017 (for Marketscan)/March 2019 (for Optum) and 01 January 2012-December 2017 for Medicare	- 73,333,681	1,531,203	- 189,850,391	2,139,644	- 20,002,243	3,463,932
Patients who have continuous 6 months registration in the database	-198,718	1,332,485	-233,411	1,906,233	-926,605	2,537,327
Patients without prior use of reference	-837,680	494,805	-1,282,498	623,735	-1,516,234	1,021,093
Patients without prior use of exposure	-58,834	435,971	-71,555	552,180	-57,547	963,546
Excluded because patient qualified in >1 exposure category	-193	435,778	-301	551,879	-111	963,435
Patients who did not have missing age information	-13	435,765	0	551,879	0	963,435
Patients who did not have missing gender information	-26	435,739	0	551,879	0	963,435
Excluded based on Inclusion 1- DM Type 2	-20,512	415,227	-49,327	502,552	-8,942	954,493
Excluded based on Inclusion 2- Age >=40	-8,101	407,126	-17,260	485,292	0	954,493
Excluded based on Inclusion 4- High risk for a CV event defined as having either established CV disease and/or multiple risk factors	-34,138	372,988	-73,801	411,491	-3,577	950,916
Excluded based on Exclusion1- CCI >=10	-3,466	369,522	-1,659	409,832	-17,277	933,639
Excluded based on Exclusion 2- treatment with an incretin-based therapy such as DPP-4 inhibitors and/or GLP-1 mimetics	-13,198	356,324	-18,748	391,084	-33,418	900,221
Excluded based on Exclusion 3- Acute vascular (cardiac or stroke) event <2 months [i.e. ACS/unstable angina OR Any stroke (inpatient, any)]	-766	355,558	-1,546	389,538	-1,979	898,242
Excluded based on Exclusion 4- chronic dialysis or renal transplant	-592	354,966	-434	389,104	-2,718	895,524
Excluded based on Exclusion 5- Pregnancy	-7	354,959	-11	389,093	-9	895,515
Excluded based on Exclusion 6- HIV/AIDS (dx and meds) with ICD10 CODES	-129	354,830	-104	388,989	-206	895,309
Excluded based on Exclusion 7- Lupus	-174	354,656	-122	388,867	-517	894,792
Excluded based on Exclusion 8- long-term (>30 consecutive days) oral corticosteroids use	-2,286	352,370	-2,495	386,372	-7,501	887,291
Excluded based on Exclusion 9- Morbid Obesity	-3,600	348,770	-2,126	384,246	-6,087	881,204
Excluded based on Exclusion 13- Non-compliance	-1408	347,362	-447	383,799	-2,954	878,250

Final cohort	3	347,362	383,799	878,250
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^{*} Medicare database includes only patients with at least one diagnosis for diabetes, heart failure, or cerebrovascular disease.

6. Variables

6.1 Exposure-related variables:

Study drug:

The study exposure of interest is initiation of saxagliptin. Initiation will be defined by no use of saxagliptin or a comparator in the prior 6 months before treatment initiation (washout period).

Comparator agents:

- Initiators of saxagliptin will be compared to initiators of
 - o 2nd generation sulfonylureas

Because saxagliptin and comparators are frequently used as second or third line treatments of T2DM, we expect it to be unlikely that saxagliptin and comparators are initiated in patients with substantially different baseline risk for proposed outcomes.

6.2 Preliminary covariates:

- Age
- Sex
- Combined Comorbidity Index (CCI), measured over the default baseline covariate assessment period, defined as 180 days prior to and including index date

Covariates listed above represent only a small subset of covariates that will ultimately be controlled for in the design and analysis. We use the covariates above only for initial feasibility analyses to judge whether there is likely to be sufficient overlap between treatment groups to proceed with the study. Remaining covariates are defined only after the study has passed the initial feasibility analysis and the initial power assessment and are listed in Table 1 (Appendix B). These covariates are based on those used by Patorno et al. (2019).

6.3 Outcome variables and study follow-up:

6.3.1 Outcome variables

Effectiveness outcomes of interest (definitions provided in **Appendix A**):

- <u>Primary outcome</u>: 3-point major adverse cardiovascular events (MACE), i.e., non-fatal myocardial infarction, non-fatal stroke, or CV mortality
- Secondary outcomes: Individual MACE components:
 - o Hospital admission for MI (for purposes of this individual component, fatal MI is included)
 - Hospital admission for stroke (for purposes of this individual component, fatal stroke is included)
 - All-cause mortality/CV mortality:
 - All-cause inpatient mortality identified using discharge status codes will be used as a proxy for "CV mortality" in commercial databases
 - Information on CV mortality through data linkage with the National Death Index (NDI) will only become available at a later date for Medicare and will be used in secondary analyses.

Control outcomes of interest (control outcomes only serve to assess aspects of study validity but are not further interpreted):

1. Severe hypoglycemia (we expect to see protective effect; American Diabetes Association, 2018)

Control outcome definitions

Outcome	Hospital Discharge Code(s)	Comments
Severe hypoglycemia	Severe hypoglycemia Any-position ED or primary inpatient ICD-9 diagnosis: 251.0, 251.1x, 251.2x, or 250.8x. Outcomes identified by 250.8x are not included if they co-occur with one of the following diagnoses: 259.8, 272.7, 681.xx, 682.xx, 686.9, 707.1x, 707.2x, 707.8, 707.9, 709.3, 730.0x, 730.1x, 730.2x, 731.8	Note- The corresponding ICD-10 codes will be used also

6.3.2 Study follow-up

Both as-treated (AT) and intention-to-treat (ITT) analyses will be conducted with treatment defined as the index drug on the day of cohort entry. Because adherence in the real world databases is expected to be much worse than in the trial, the AT analysis is the **primary** analysis, as it targets the relative hazard of outcomes on treatment.

For the AT analyses, the follow-up will start the day after initiation of liraglutide and comparator and will continue until the earliest date of the following events:

- The first occurrence of the outcome of interest, unless otherwise specified for selected outcomes,
- The date of end of continuous registration in the database,
- End of the study period,
- Measured death event occurs,
- Nursing home admission
 - Nursing home admissions are considered a censoring event because the data sources utilized typically provide little to no data on a patient, particularly on drug utilization, after admission. We will utilize this as an exclusion reason for cohorts for the same reason.
- The date of drug discontinuation, defined as the date of the last continuous treatment episode of the index drug (saxagliptin and comparator) plus a defined grace period (i.e., 30 days after the end of the last prescription's days' supply in main analyses).
- The date of augmentation or switching from an exposure to a comparator or any other agent in the comparator class and vice versa (e.g. switching from glimepiride to glipizide would be a censoring event);
 - o A dosage change on the index treatment does not fulfill this criterion
 - An added treatment that is not part of the exposure or comparator group does not fulfill this criterion (e.g. if a saxagliptin user adds insulin, he or she does not get censored at the time of insulin augmentation)

For the ITT analyses, the censoring based on the augmentation/switching and treatment discontinuation will be replaced with a maximum allowed follow-up time of 365 days.

7. Initial Feasibility Analysis

Aetion report links:

Optum- https://bwh-dope.aetion.com/#/projects/details/641/results/29994/result/0
Marketscan- https://bwh-dope.aetion.com/#/projects/details/642/results/29995/result/0
Medicare- https://bwh-dope.aetion.com/#/projects/details/643/results/29996/result/0

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Date conducted: rerun on 01/07/2019

Complete Aetion feasibility analysis using age, sex, and CCI as the only covariates and the primary endpoint (Section 6.3.1) as the outcome. No measures of association will be computed nor will incidence rates stratified by treatment group.

- Report patient characteristics by treatment group
- Report summary parameters of the overall study population
- Report median follow-up time by treatment group
- Report reasons for censoring in the overall study population

8. Initial Power Assessment

Aetion report links:

Optum- https://bwh-dope.aetion.com/#/projects/details/641/results/29997/result/1

Marketscan- https://bwh-dope.aetion.com/#/projects/details/642/results/29998/result/1

Medicare- https://bwh-dope.aetion.com/#/projects/details/643/results/29999/result/1

Date conducted: rerun on 01/07/2019

- In order to complete the initial power analysis, the dummy outcome of a 90-day gap in database enrollment will be used. This outcome is used to ensure that no information on the comparative risks of the outcomes of interest are available at this stage. Complete a 1:1 PS-matched comparative analysis using this outcome. PS should include only 3 covariates: age, sex, and combined comorbidity index. Power calculations are based on the formulas from Chow et al. (2008).
- Stop analyses until feasibility and power are reviewed by primary investigators and FDA. Reviewers evaluate the results of the analyses described above in Sections 7 and 8, including numbers of patients, patient characteristics, follow-up time, and reasons for censoring by treatment group, as well as overall rates of outcomes and study power. These parameters are re-evaluated and reported in the subsequent sections, after incorporating feedback and refining the protocol.

Reviewed by PI:	Jessica M. Franklin	Date reviewed:	10/26/18
Reviewed by FDA:	Ken Quinto	Date reviewed:	12/19/18
Reasons for stopping			
analysis (if required):			

9. Balance Assessment after PS matching

Aetion report name:

Optum- https://bwh-dope.aetion.com/projects/details/641/results/44771/result/0
Marketscan- https://bwh-dope.aetion.com/projects/details/642/results/44772/result/0
Medicare- https://bwh-dope.aetion.com/projects/details/643/results/45431/result/0

Date conducted: 11/18/2019 (Medicare 11/30/2019)

After review of initial feasibility and power analyses, complete creation of the remaining covariates (see Table 1 below for list of covariates). Again, using the dummy outcome of a 90-day gap in database enrollment, complete a 1:1 PS-matched analysis. The PS should include the complete list of covariates (excluding laboratory values, which are missing in some patients).

• Provide plot of PS distributions stratified by treatment group.

Note- Please refer to Appendix B.

• Report covariate balance after matching.

Note- For Table 1, please refer to Appendix B.

• Report reasons for censoring by treatment group.

	Overall	Referent	Exposure
Dummy Outcome	0 (0.00%)	0 (0.00%)	0 (0.00%)
Death	1,783 (0.98%)	1,051 (1.15%)	732 (0.80%)
Start of an additional exposure	10,211 (5.61%)	976 (1.07%)	9,235 (10.14%)
End of index exposure	122,449 (67.23%)	61,560 (67.60%)	60,889 (66.86%)
Specified date reached	11,855 (6.51%)	7,184 (7.89%)	4,671 (5.13%)
End of patient enrollment	25,411 (13.95%)	13,085 (14.37%)	12,326 (13.54%)

Switch to other SUs (for censoring) + nursing home admission	10,419 (5.72%)	7,208 (7.92%)	3,211 (3.53%)
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• Report follow-up time by treatment group.

	Median Follow-Up Time (Days) [IQR]			
Patient Group	Optum	Marketscan	Medicare	
Overall Patient Population	139 [58-344]	153 [82-367]	155 [85-373]	
Referent	144 [78-354]	180 [102-432]	180 [102- 432]	
Exposure	132 [58-331]	140 [58-323]	140 [58-323]	

• Report overall risk of the primary outcome.

	Optum	Marketscan	Medicare
Risk per 1,000 patients	13.68	16.21	38.38

10. Final Power Assessment

Date conducted: 2/1/2019

- Re-calculate power in the appropriate excel table, using the revised number of matched patients from the PS-match in Section 9. All other parameters in the table should be the same as in Section 8. If the study is to be implemented in more than one database, copy and paste excel sheet to report power for each database separately and for the pooled analysis that uses data from all databases together. Power calculations are based on the formulas from Chow et al. (2008).
 - o Pooled

Non-inferiority Analysis		Superiority Analysis	
Number of patients matched		Number of patients matched	
Reference	91,063	Reference	91,063
Exposed	91,063	Exposed	91,063
Risk per 1,000 patients	22.76	Risk per 1,000 patients	22.76
Assumed HR from RCT	1	Desired HR from RCT	0.83
Alpha (2-sided)	0.05	Alpha (2-sided)	0.05
Non-inferiority margin	1.3		
Number of events expected	4145.18776	Number of events expected	4145.18776
Power	1	Power	0.999973077

o Optum

Non-inferiority Analysis		Superiority Analysis	
Number of patients matched		Number of patients matched	
Reference	20,772	Reference	20,772
Exposed	20,772	Exposed	20,772
Risk per 1,000 patients	13.68	Risk per 1,000 patients	13.68
Assumed HR from RCT	1	Desired HR from RCT	0.83
Alpha (2-sided)	0.05	Alpha (2-sided)	0.05
Non-inferiority margin	1.3		
Number of events expected	568.32192	Number of events expected	568.32192
Power	0.878466057	Power	0.602983034

Marketscan

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Non-inferiority Analysis		Superiority Analysis	
Number of patients matched		Number of patients matched	
Reference	29,150	Reference	29,150
Exposed	29,150	Exposed	29,150
Risk per 1,000 patients	16.21	Risk per 1,000 patients	16.21
Assumed HR from RCT	1	Desired HR from RCT	0.83
Alpha (2-sided)	0.05	Alpha (2-sided)	0.05
Non-inferiority margin	1.3		
Number of events expected	945.043	Number of events expected	945.043
Power	0.980903542	Power	0.817020552

Medicare

Non-inferiority Analysis		Superiority Analysis	
Number of patients matched		Number of patients matched	
Reference	41,141	Reference	41,141
Exposed	41,141	Exposed	41,141
Risk per 1,000 patients	38.38	Risk per 1,000 patients	38.38
Assumed HR from RCT	1	Desired HR from RCT	0.83
Alpha (2-sided)	0.05	Alpha (2-sided)	0.05
Non-inferiority margin	1.3		
Number of events expected	3157.98316	Number of events expected	3157.98316
Power	0.999999969	Power	0.999472659

• Stop analyses until balance and final power assessment are reviewed by primary investigators, FDA, and assigned members of advisory board. Reviewers evaluate the results of the analyses described above in Sections 9 and 10, including numbers of

patients, balance in patient characteristics, follow-up time, and reasons for censoring by treatment group, as well as overall rates of outcomes and study power.

Reviewed by PI:	Jessica Franklin	Date reviewed:	12/9/19
Reviewed by FDA:	Ken Quinto	Date reviewed:	12/20/19
Reasons for stopping			
analysis (if required):			

11. Study Confidence and Concerns

Deadline for voting on study confidence and listing concerns: 12/20/19

- If final feasibility and power analyses are reviewed and approved, proceed to the remaining protocol steps.
- All study team and advisory board members that review this protocol should at this stage provide their level of confidence for the
 success of the RWD study in the <u>Google Form</u>. This form also provides space for reviewers to list any concerns that they feel may
 contribute to a failure to replicate the findings of the RCT, including differences in study populations, poor measurement of study
 variables, or residual confounding. All responses will be kept confidential and individual-level results will only be shared with the
 individual respondent.

12. Register study protocol on clinicalTrials.gov

Date conducted:

• Register the study on <u>clinicalTrials.gov</u> and upload this document.

13. Comparative Analyses

Aetion report name:

<u>Date conducted:</u>

13.1 For primary analysis:

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• In the PS-matched cohort from Section 9, calculate the HR for each outcome for Saxagliptin versus referent patients using a Cox proportional hazards model.

13.2 For secondary analyses:

• In the pre-matched cohort, perform asymmetrical trimming to remove patients with PS values below the 2.5th percentile of treated patients and above the 97.5th percentile of untreated patients. In the trimmed cohort, calculate the HR for Saxagliptin versus referent patients using a Cox proportional hazards model, adjusting for deciles of the PS.

14. Requested Results

14.1 Results from primary and secondary analyses:

Separately for each endpoint:

Analysis	No. exposed events	No. referent events	Exposed rate	Referent rate	HR (95% CI)
Crude					
Primary analysis					
Analysis 2					

HR, Hazard Ratio; Cl, Confidence Interval.

15. References

American Diabetes Association. 8. Pharmacologic Approaches to Glycemic Treatment: Standards of Medical Care in Diabetes-2018. Diabetes Care. 2018;41(Suppl 1):S73-S85. doi:10.2337/dc18-S008.

Chow S, Shao J, Wang H. 2008. *Sample Size Calculations in Clinical Research*. 2nd Ed. Chapman & Hall/CRC Biostatistics Series. **page** 177

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Patorno E, Pawar A, Franklin JM, et al. Empagliflozin and the Risk of Heart Failure Hospitalization in Routine Clinical Care: A First Analysis from the Empagliflozin Comparative Effectiveness and Safety (EMPRISE) Study. Circulation. 2019; in press. (https://www.ahajournals.org/doi/pdf/10.1161/CIRCULATIONAHA.118.039177)

Scirica BM, Bhatt DL, Braunwald E, Steg PG, Davidson J, Hirshberg B, Ohman P, Frederich R, Wiviott SD, Hoffman EB, Cavender MA. Saxagliptin and cardiovascular outcomes in patients with type 2 diabetes mellitus. New England Journal of Medicine. 2013; 369(14):1317-26.

#	SAVOR-TIMI 53 trial definitions	Implementation in routine care	References/Rationale	Color coding
	Tria	l details- Negative trial	Please see the following Google Drive for further details or any missing information: https://drive.google.com/open?id=1WD618wrywYjEaXzfl.TcuK-VCcnb6b-gV	Criteria
	ЕХР	DSURE vs. COMPARISON	ICD-10 codes are not listed in this document because of excel cell size limitations and excessive number of ICD-10 codes. Full ICD-10 code lists will be available in the above Google Drive Folder (link above). ICD-9 to ICD-10 code conversions were completed using a SAS macro that implements forward/backward mapping based on the CMS ICD-9 to ICD-10 mapping: https://www.nber.org/data/icd9-icd-10-cm-and-pcs-crosswalk-general-equivalence-mapping.html	Adequate mapping in claims
	Saxagliptin 5 mg QD (2.5 mg in subjects with moderate/severe renal impairment) vs placebo	Saxagliptin vs. 2nd generation sulfonylurea		Intermediate mapping in claims
		PRIMARY OUTCOME		Poor mapping or cannot be measured in claims
	Composite of cardiovascular death, nonfatal myocardial infarction, or nonfatal ischemic stroke HR = 1.00 (95% CI 0.89-1.12)	Measured 1 days after drug initiation in diagnosis position specified below and inpatient care setting: Inpatient mortality/MI/Stroke — For MI Any diagnosis position in inpatient care setting ICD-9 bx 410.X (acute myocardial infarction) excluding 410.x2 (subsequent episode of care), as the principal (primary) or the next (secondary) diagnosis For stroke Primary diagnosis position in inpatient care setting ICD-9 discharge diagnosis: 430.xx Subarachnoid hemorrhage (SAH) 431.xx Intracerebral hemorrhage (ICH) 433.x1 Tocclusion and stenosis of precerebral arteries with cerebral infarction 434.xx (excluding 434.x0) Occlusion and stenosis of cerebral arteries with cerebral infarction 436.x Acute, but ill-defined cerebrovascular events Mortality-See Mortality Sheet.	For MI: →PPV 94% in Medicare claims data [Kiyota Y, Schneeweiss S, Glynn RJ, Cannuscio CC, Avorn J, Solomon DH. Accuracy of Medicare claims-based diagnosis of acute myocardial infarction: estimating positive predictive value on the basis of review of hospital records. American heart journal 2004;148:99-104.] →PPV 88.4% in commercially-insured population [Wahl PM, Rodgers K, Schneeweiss S, et al. Validation of claims-based diagnostic and procedure codes for cardiovascular and gastrointestinal serious adverse events in a commercially-insured population. Pharmacoepidemiology and Drug Safety 2010;19:596-603.] For stroke: PPV of 85% or higher for ischemic stroke PPV ranging from 80% to 98% for hemorrhagic stroke	Can't be measured in claims but not important for the analysis
		NCLUSION CRITERIA		
1	Diagnosed with T2DM based on the current American Diabetes Association guidelines	Patients with a diagnosis of T2DM (ICD-9 Dx code of 250.x0 or 250.x2) in the 180 days prior to drug initiation in any diagnosis position and inpatient or outpatient care setting.	Patorno, Elisabetta et al. "Cardiovascular outcomes associated with canagliflozin versus other non-gliflozin antidiabetic drugs: population based cohort study." BMJ 2018;360:kl19 http://dx.doi.org/10.1136/bmj.kl19 and the Risk of Heart Failure Hospitalization in Routine Clinical Care: A First Analysis from the Empagliflozin Comparative Effectiveness and Safety (EMPRISE) Study." Circulation. 2019 Apr 8. doi: 10.1161/CIRCULATIONAHA.118.039177	
2	Age ≥40 years	Age ≥40 years at drug initiation		
3	Glycated hemoglobin level of ≥6.5% (based on the last measured and documented laboratory measurement in the previous 6 months)	N/A		
4	High risk for a CV event defined as having either established CV disease and/or	-		1
一	History of established cardiovascular disease	-		1
		Measured 180 days prior to drug initiation in any diagnosis position and inpatient or outpatient care setting - Ischemic heart disease $410.xx\cdot414.xx$	Patorno, Elisabetta et al. "Cardiovascular outcomes associated with canagliflozin versus other non-gliflozin antidiabetic drugs: population based cohort study." BMJ 2018;360:k119 http://dx.doi.org/10.1136/bmj.k119 Patorno, Elisabetta et al. "Empagliflozin and the Risk of Heart Failure Hospitalization in	
	– Ischemic heart disease, and/or		Routine Clinical Care: A First Analysis from the Empagliflozin Comparative Effectiveness and Safety (EMPRISE) Study." Circulation. 2019 Apr 8. doi: 10.1161/CIRCULATIONAHA.118.039177	

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5	Women of childbearing potential must take precautions to avoid pregnancy throughout the study and for 4 weeks after intake of the last dose. Men participating in the study should also take precautions not to father a child while participating in the study and for 4 weeks after intake of the last dose.	Since this is an inclusion criteria, it's difficult to implement the contraceptive use requirement here, but we have pregnancy as an exclusion criteria later, so this requirement is implemented then.	
6	Provision of informed consent before any study specific procedures	N/A	
	E	XCLUSION CRITERIA	
1	Any conditions that, in the opinion of the investigator, may render the patient unable to complete the study including non-CV disease (eg, active malignancy, cardiomyopathy, cirrhosis, or chronic lung disease) with a likely fatal outcome within 5 years	Measured 180 days prior to drug initiation - CCI >= 95 percentile	Gagne, Josh J et. al. "A combined comorbidity score predicted mortality in elderly patients better than existing scores." J Clin Epidemiol. 2011 Jul;64(7):749-59. doi: 10.1016/j.jclinepi.2010.10.004. Sun, Jenny W et. al. "Validation of the Combined Comorbidity Index of Charlson and Elixhauser to Predict 30-Day Mortality Across ICD-9 and ICD-10." Med Care. 2018 Sep;56(9):812. doi: 10.1097/MLR.000000000000954.
2	Current or previous (within 6 months) treatment with an incretin-based therapy such as DPP-4 inhibitors and/or GLP-1 mimetics	Measured 180 days prior to drug initiation - Current or previous (prior 6 months) occurrence of incretin-based mimetics. Drugs in the incretin mimetic class include exenatide, liraglutide, sitagliptin, saxagliptin, alogliptin, and linagliptin	Source- https://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm343516.htm
3	Acute vascular (cardiac or stroke) event <2 months before randomization	Measured 60 days prior to drug initiation in any diagnosis/procedure position and inpatient care setting - ACS/unstable angina 411.xx Any stroke ICD-9 Dx: 430.xx, 431.xx, 433.xx, 434.xx, 436.xx	Patorno, Elisabetta et al. "Cardiovascular outcomes associated with canagliflozin versus other non-gilflozin antidiabetic drugs: population based cohort study." BMJ 2018;360:k119 http://dx.doi.org/10.1136/bmj.k119 Patorno, Elisabetta et al. "Empagliflozin and the Risk of Heart Failure Hospitalization in Routine Clinical Care: A First Analysis from the Empagliflozin Comparative Effectiveness and Safety (EMPRISE) Study." Circulation. 2019 Apr 8. doi: 10.1161/CIRCULATIONAHA.118.039177
4	Initiation of chronic dialysis and/or renal transplant and/or a serum creatinine >6.0 mg/dL	Measured 180 days prior to drug initiation in any diagnosis position and inpatient or outpatient care setting: Kidney transplant Codes include: -(CD9 dx codes: o V42.0x, Kidney transplant status o 996.81 Complications of transplanted kidney -(CD9 prox codes: o 55.6x, Transplant of kidney (Exclude 55.61) -(CP14 codes: o 50360, Renal allotransplantation, implantation, graft, w/o donor & recipient nephrectomy o 50365, Renal allotransplantation, implantation, graft, w/ donor & recipient nephrectomy	Patorno, Elisabetta et al. "Cardiovascular outcomes associated with canagliflozin versus other non-gliflozin antidiabetic drugs: population based cohort study." BMJ 2018;360:k119 http://dx.doi.org/10.1136/bmj.k119 Patorno, Elisabetta et al. "Empagliflozin and the Risk of Heart Failure Hospitalization in Routine Clinical Care: A First Analysis from the Empagliflozin Comparative Effectiveness and Safety (EMPRISE) Study." Circulation. 2019 Apr 8. doi: 10.1161/CIRCULATIONAHA.118.039177
5	Pregnant or breastfeeding	Measured 180 days prior to drug initiation in any diagnosis position and inpatient or outpatient care setting- Pregnancy: Please see Pregnancy sheet.	
6	History of human immunodeficiency virus	Measured 180 days prior to drug initiation in any diagnosis/ procedure position and inpatient care setting or a dispensing of one of the following drugs - HIV 042 Human immunodeficiency virus [HIV] disease 079.53 Human immunodeficiency virus, type 2 [HIV-2] V08 Asymptomatic human immunodeficiency virus [HIV] infection status OR filled prescription for HIV treatment: Please see HIV Treatment sheet.	Patorno, Elisabetta et al. "Cardiovascular outcomes associated with canagliflozin versus other non-gliflozin antidiabetic drugs: population based cohort study." BMJ 2018;360:k119 http://dx.doi.org/10.1136/bmj.k119 Patorno, Elisabetta et al. "Empagliflozin and the Risk of Heart Failure Hospitalization in Routine Clinical Care: A First Analysis from the Empagliflozin Comparative Effectiveness and Safety (EMPRISE) Study." Circulation. 2019 Apr 8. doi: 10.1161/CIRCULATIONAHA.118.039177

7	Patients being treated for severe autoimmune diseases such as lupus	Measured 180 days prior to drug initiation in any diagnosis/procedure position and inpatient care setting Lupus 373.34 - (ICD9) DISCOID LUPUS ERYTHEMATOSUS OF EYELID 710.0 - (ICD9) SYSTEMIC LUPUS ERYTHEMATOSUS	
8	Any patient currently receiving long-term (>30 consecutive days) treatment with an oral steroid	Measured 180 days prior to drug initiation as a dispensing of one of the following drugs - Oral corticosteroids:- Cortisone, hydrocortisone, prednisone, prednisolone, methylprednisolone, triamcinolone, dexamethasone, betamethasone.	Patorno, Elisabetta et al. "Cardiovascular outcomes associated with canagliflozin versus other non-gliflozin antidiabetic drugs: population based cohort study." BMJ 2018;360:k119 http://dx.doi.org/10.1136/bmj.k119 Patorno, Elisabetta et al. "Empagliflozin and the Risk of Heart Failure Hospitalization in Routine Clinical Care: A First Analysis from the Empagliflozin Comparative Effectiveness and Safety (EMPRISE) Study." Circulation. 2019 Apr 8. doi: 10.1161/CIRCULATIONAHA.118.039177
9	Patients with		
9a		Measured 180 days prior to drug initiation in any diagnosis/procedure position and inpatient care setting- Morbid Obesity 278.01 - (ICD9) MORBID OBESITY	
9b	Last measured HbA1c ≥12%	N/A	
9с	Sustained BP >180/100 mm Hg	N/A	
9d	 LDL-C >250 mg/dL (>6.48 mmol/L) (based on the last measured and documented laboratory measurement in the previous 6 months) regardless of lipid-lowering therapy 	N/A	
9e	Triglycerides > 1,000 mg/dL (N11.3 mmol/L) (based on the last measured and documented laboratory measurement in the previous 6 months)	N/A	
9f	HDL-C b25 mg/dL (<0.64 mmol/L) (based on the last measured and documented laboratory measurement in the previous 6 months)	N/A	
9g	Known liver function tests >3 times upper limit of normal (ULN) (based on the last measured and documented laboratory measurement in the previous 6 months)	N/A	
10	Involvement in the planning and/or conduct of the study (applies to both AstraZeneca and Bristol – Myers Squibb or representative staff and/or staff at the study site)	N/A	
11	Previous randomization in the present study	N/A	
12	Participation in another clinical study with an investigational product and/or intervention within 30 days before visit 1	N/A	
13		Measured 180 days prior to drug initiation in any diagnosis/procedure position and inpatient care setting. Non-compliance V15.81 - (ICD9) PERSONAL HISTORY OF NONCOMPLIANCE WITH MEDICAL TREATMENT PRESENTING HAZARDS TO HEALTH V45.12 - (ICD9) NONCOMPLIANCE WITH RENAL DIALYSIS	

Trial ID	Neg5
Trial Name (with web links)	SAVOR-TIMI 53
Trial Name (with pdflinks)	SAVOR-TIMI 53
NCT	NCT01107886
Trial category	Negative trial
Therapeutic Area	Endocrinology
RCT Category	2b-Failed S with NI-No label change
Brand Name	Onglyza
Generic Name	saxagliptin
Sponsor	AstraZeneca Bristol-Myers Squibb
<u>Year</u>	2013
	Primary composite endpoint of Cardiovascular Death (CV Death), Non-fatal
Measurable endpoint	Myocardial Infarction (MI), or Non-fatal Ischaemic Stroke
<u>Exposure</u>	Saxagliptin
<u>Comparator</u>	Placebo
<u>Population</u>	patients with type 2 diabetes who had a history of, or were at risk for, cardiovascular events. The concomitant Anti-hyperglycemic and Cardiovascular Medications- 75% aspirin, 78% statins, 53% ACE, 61% beta-blockers
Trial finding	HR = 1.00 (95% CI 0.89-1.12)
<u>Notes</u>	
No. of Patients	18,206
Non-inferiority margin	HR = 1.3
Assay Sens. Endpoint	From trial- Hospitalization for heart failure. Alternative suggestion- all-cause mortality/MACE/hypoglycemia
Assay Sens. Finding	3.5% vs. 2.8%; hazard ratio, 1.27; 95% CI, 1.07 to 1.51; P=0.007
Comments/Notes	It is hard to replicate, so alternative option would be to replicate "all-cause mortality"/ MACE/hypoglycemia as shown in this Taiwan study comparing DPP4i to sulfonylureas - http://annals.org/aim/article-abstract/2456123/effects-clinical-outcomes-adding-dipeptidyl-peptidase-4-inhibitors-versus-sulfonylureas
<u>Power</u>	0.85 power to identify a 17% relative reduction of the primary end point with saxagliptin versus placebo and 98% power to test for noninferiority of saxagliptin versus placebo (reject the upper limit of 95% CI for a hazard ratio <1.3 at a 1-sided α of .025)
Blinding	Double-blinded
Statistical Method	Superiority and non-inferiority
<u>Approval indication</u>	

Mortality-Dependent on data source.

1. All-cause mortality / inpatient mortality Identified using the vital status file-

Medicare

Identified using the discharge status codes-

Optum-

- 20 = EXPIRED
- 21 = EXPIRED TO BE DEFINED AT STATE LEVEL
- 22 = EXPIRED TO BE DEFINED AT STATE LEVEL
- 23 = EXPIRED TO BE DEFINED AT STATE LEVEL
- 24 = EXPIRED TO BE DEFINED AT STATE LEVEL
- 25 = EXPIRED TO BE DEFINED AT STATE LEVEL
- 26 = EXPIRED TO BE DEFINED AT STATE LEVEL
- 27 = EXPIRED TO BE DEFINED AT STATE LEVEL
- 28 = EXPIRED TO BE DEFINED AT STATE LEVEL
- 29 = EXPIRED TO BE DEFINED AT STATE LEVEL
- 40 = EXPIRED AT HOME (HOSPICE)
- 41 = EXPIRED IN A MEDICAL FACILITY (HOSPICE)
- 42 = EXPIRED PLACE UNKNOWN (HOSPICE)

Truven-

- 20 Died
- 22 Died
- 23 Died
- 24 Died
- 25 Died
- 26 Died
- 27 Died
- 28 Died
- 29 Died
- 40 Other died status or Expired at home (Hospice claims only) (depends on year)
- 41 Other died status or Expired in medical facility (Hospice claims only) (depends on year)

- 42 Other died status or Expired place unknown (Hospice claims only) (depends on year)
- 21 Died or Disch./Transf. to court/law enforcement (depends on year)

2. CV mortality

Information on CV mortality through data linkage with the National Death Index (NDI) will be available for Medicare and Optum Clinformatics at a later date. We will conduct secondary analyses using CV mortality at that time.

ESRD, defined as 2 codes (either inpatient or outpatient), separated by at least 30 days

ESRD, defined as 2 codes (either inpatient or outpatient), separated by at least 30 days

Codes include:

- ICD9 prox codes:

39.95, Hemodialysis

54.98, Peritoneal dialysis

-ICD9 dx codes:

585.5x, Chronic kidney disease, Stage V (for ESRD with no mention of dialysis)

585.6x, End stage renal disease (for ESRD with dialysis)

V56.0x, encounter for dialysis NOS

V56.8x, encounter for peritoneal dialysis

V45.1x, renal dialysis status

- CPT4 codes:

and over

90957, 90960, ESRD related services monthly, for patients 12-19 and 20 years of age and older; with 4 or more face-to-face physician visits per month

90958, 90961, ESRD related services monthly, for patients 12-19 and 20 years of age and older; with 2-3 face-to-face physician visits per month

90959, 90962, ESRD related services monthly, for patients 12-19 and 20 years of age and older; with 1 face-to-face physician visit per month

90920, 90921, ESRD related services per full month; for patients 12-19 and twenty years of age and over 90924, 90925, ESRD related services (less than full month), per day; for patients 12-19 and twenty years of age

90935, Hemodialysis procedure with single physician evaluation

90937, Hemodialysis procedure requiring repeated evaluation(s) with or without substantial revision of dialysis prescription

90945, Dialysis procedure other than hemodialysis (eg, peritoneal dialysis, hemofiltration, or other continuous renal replacement therapies), with single physician evaluation

90947, Dialysis procedure other than hemodialysis (eg, peritoneal dialysis, hemofiltration, or other continuous renal replacement therapies) requiring repeated physician evaluations, with or without substantial revision of dialysis prescription

90965, 90966, ESRD related services for home dialysis per full month, for patients 12-19 and 20 years of age and older

nnnen nnnen ECDD valatad comicas for districtions than a full month of comica nor down for nation to 12 10 and

שטשטש, שטש זיט, בארט רפומנפט services וטר מומוץ sis less נוומון מוטון וווטוונון טו service, per ממץ; וטר patients בע-בש מוט 20 years of age and older

90989, Dialysis training, patient, including helper where applicable, any mode, completed course 90993, Dialysis training, patient, including helper where applicable, any mode, course not completed, per training session

90999, Unlisted dialysis procedure, inpatient or outpatient

99512, Home visit for hemodialysis

- HCPCS codes:

G0257, Unscheduled or emergency dialysis treatment for ESRD patient in a hospital outpatient dept. that is not certified as an ESRD facility

G0314, G0317, ESRD related services during the course of treatment, for patients 12-19 and 20 yrs of age an over to include monitoring for the adequacy of nutrition, etc. w/4 or more physician visit per month G0315, G0318, ESRD related services during the course of treatment, for patients 12-19 and 20 yrs of age and over to include monitoring for the adequacy of nutrition, etc. w/2 or 3 physician visit per month

סט בס, סט בש, באגט רפומנפט services during the course of treatment, for patients בב-בש and בט yrs of age and over to include monitoring for the adequacy of nutrition, etc. w/1 physician visit per month

G0322, G0323, ESRD related services for home dialysis patients per full month: for patients 12-19 and 20 yrs of age and over to include monitoring for adequacy of nutrition and etc.

G0326, G0327, ESRD related services for home dialysis (less than full month), per day; for patients 12-19 and 20 yrs of age and over

S9335, Home therapy, hemodialysis; administrative services, professional pharmacy services, care coordination, and all necessary supplies and equipment (drugs and nursing services coded separately), per diem S9339, Home therapy, peritoneal dialysis, administrative services, care coordination and all necessary supplies and equipment, per diem

OR

Kidney transplant, defined as either 1 inpatient or 1 outpatient code

Codes include:

-ICD9 dx codes:

V42.0x, Kidney transplant status

996.81 Complications of transplanted kidney

-ICD9 prox codes:

55.6x, Transplant of kidney (Exclude 55.61)

- CPT4 codes:

 $50360, Renal\ allot ransplantation, implantation, graft, w/o\ donor\ \&\ recipient\ nephrectomy$

50365, Renal allotransplantation, implantation, graft, w/donor & recipient nephrectomy

HIV Treatment Abacavir Amprenavir Atazanavir Darunavir Delavirdine Didanosine Efavirenz Emtricitabine Enfuvirtide Etravirine Fosamprenavir Indinavir Lamivudine-Zidovudine Maraviroc Nelfinavir Nevirapine Raltegravir Rilpivirine Ritonavir Ritonavir-Lopinavir Saquinavir Stavudine Tipranavir Zalcitabine Zidovudine

Pregnancy Dx codes 650 NORMAL DELIVERY 660 OBSTRUCTED LABOR 661 ABNORMALITY OF FORCES OF LABOR 662 LONG LABOR 663 UMBILICAL CORD COMPLICATIONS DURING LABOR AND DELIVERY 664 TRAUMA TO PERINEUM AND VULVA DURING DELIVERY 665 OTHER OBSTETRICAL TRAUMA 667 RETAINED PLACENTA OR MEMBRANES WITHOUT HEMORRHAGE 668 COMPLICATIONS OF THE ADMINISTRATION OF ANESTHETIC OR OTHER SEDATION IN LABOR AND DELIVERY 669.94 UNSPECIFIED COMPLICATION OF LABOR AND DELIVERY POSTPARTUM CONDITION OR COMPLICATION V24 POSTPARTUM CARE AND EXAMINATION V24.0 POSTPARTUM CARE AND EXAMINATION IMMEDIATELY AFTER DELIVERY V24.1 POSTPARTUM CARE AND EXAMINATION OF LACTATING MOTHER V24.2 ROUTINE POSTPARTUM FOLLOW V27 OUTCOME OF DELIVERY V27.0 MOTHER WITH SINGLE LIVEBORN V27.1 MOTHER WITH SINGLE STILLBORN V27.2 MOTHER WITH TWINS BOTH LIVEBORN V27.3 MOTHER WITH TWINS ONE LIVEBORN AND ONE STILLBORN V27.4 MOTHER WITH TWINS BOTH STILLBORN V27.5 MOTHER WITH OTHER MULTIPLE BIRTH ALL LIVEBORN V27.6 MOTHER WITH OTHER MULTIPLE BIRTH SOME LIVEBORN V27.7 MOTHER WITH OTHER MULTIPLE BIRTH ALL STILLBORN V27.9 MOTHER WITH UNSPECIFIED OUTCOME OF DELIVERY Procedure codes 72.0 LOW FORCEPS OPERATION 72.1 LOW FORCEPS OPERATION WITH EPISIOTOMY 72.2 MID FORCEPS OPERATION 72.21 MID FORCEPS OPERATION WITH EPISIOTOMY 72.29 OTHER MID FORCEPS OPERATION 72.3 HIGH FORCEPS OPERATION 72.31 HIGH FORCEPS OPERATION WITH EPISIOTOMY 72.39 OTHER HIGH FORCEPS OPERATION

- 72.4 FORCEPS ROTATION OF FETAL HEAD
- 72.5 BREECH EXTRACTION
- 72.51 PARTIAL BREECH EXTRACTION WITH FORCEPS TO AFTERCOMING HEAD
- 72.52 OTHER PARTIAL BREECH EXTRACTION
- 72.53 TOTAL BREECH EXTRACTION WITH FORCEPS TO AFTERCOMING HEAD
- 72.54 OTHER TOTAL BREECH EXTRACTION
- 72.6 FORCEPS APPLICATION TO AFTERCOMING HEAD
- 72.7 VACUUM EXTRACTION
- 72.71 VACUUM EXTRACTION WITH EPISIOTOMY
- 72.79 OTHER VACUUM EXTRACTION
- 72.8 OTHER SPECIFIED INSTRUMENTAL DELIVERY
- 72.9 UNSPECIFIED INSTRUMENTAL DELIVERY
- 73.0 ARTIFICIAL RUPTURE OF MEMBRANES
- 73.01 INDUCTION OF LABOR BY ARTIFICIAL RUPTURE OF MEMBRANES
- 73.09 OTHER ARTIFICIAL RUPTURE OF MEMBRANES
- 73.1 OTHER SURGICAL INDUCTION OF LABOR
- 73.2 INTERNAL AND COMBINED VERSION AND EXTRACTION
- 73.21 INTERNAL AND COMBINED VERSION WITHOUT EXTRACTION
- 73.22 INTERNAL AND COMBINED VERSION WITH EXTRACTION
- 73.3 FAILED FORCEPS
- 73.4 MEDICAL INDUCTION OF LABOR
- 73.5 MANUALLY ASSISTED DELIVERY
- 73.51 MANUAL ROTATION OF FETAL HEAD
- 73.59 OTHER MANUALLY ASSISTED DELIVERY
- 73.6 EPISIOTOMY
- 73.8 OPERATIONS ON FETUS TO FACILITATE DELIVERY
- 73.9 OTHER OPERATIONS ASSISTING DELIVERY
- 73.91 EXTERNAL VERSION ASSISTING DELIVERY
- 73.92 REPLACEMENT OF PROLAPSED UMBILICAL CORD
- 73.93 INCISION OF CERVIX TO ASSIST DELIVERY
- 73.94 PUBIOTOMY TO ASSIST DELIVERY
- 73.99 OTHER OPERATIONS ASSISTING DELIVERY
- 74.0 CLASSICAL CESAREAN SECTION
- 74.1 LOW CERVICAL CESAREAN SECTION
- 74.2 EXTRAPERITONEAL CESAREAN SECTION

- 74.3 REMOVAL OF EXTRATUBAL ECTOPIC PREGNANCY
- 74.4 CESAREAN SECTION OF OTHER SPECIFIED TYPE
- 74.9 CESAREAN SECTION OF UNSPECIFIED TYPE
- 74.91 HYSTEROTOMY TO TERMINATE PREGNANCY
- 74.99 OTHER CESAREAN SECTION OF UNSPECIFIED TYPE
- 75.4 MANUAL REMOVAL OF RETAINED PLACENTA
- 75.5 REPAIR OF CURRENT OBSTETRIC LACERATION OF UTERUS
- 75.6 REPAIR OF OTHER CURRENT OBSTETRIC LACERATION
- 75.7 MANUAL EXPLORATION OF UTERINE CAVITY, POSTPARTUM
- 75.9 OTHER OBSTETRIC OPERATIONS

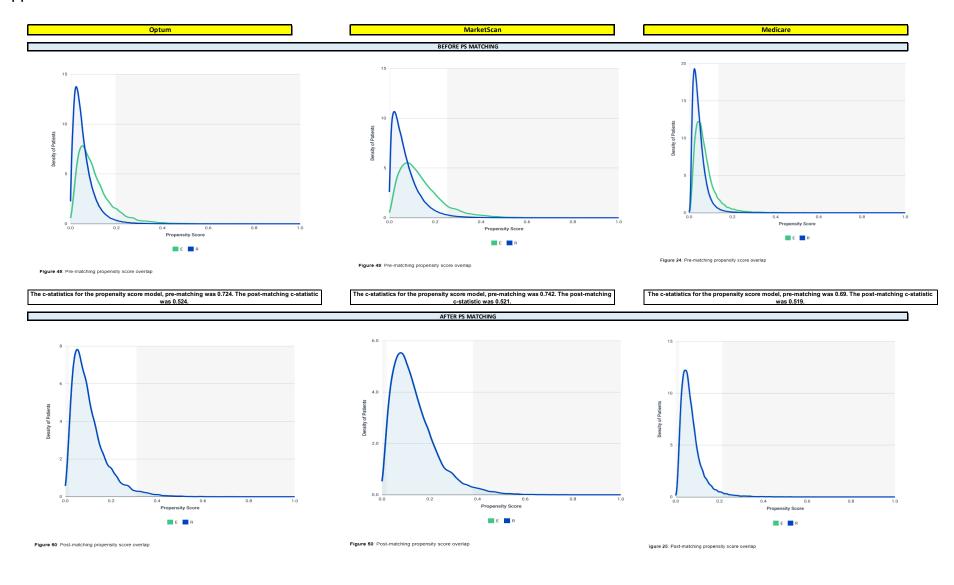


Table 1: Saxagliptin vs 2nd Generation Sulfonylureas

				Unn	natched				
r	Optui	m	Market:	Scan	Medicare			POOLED	
-	Reference-2nd	•	Reference-2nd		Reference-2nd	Exposure-	Reference-2nd		
Variable	Generation SUs	Exposure-Saxagliptin	Generation SUs	Exposure-Saxagliptin	Generation SUs	Saxagliptin	Generation SUs	Exposure-Saxagliptin	St. Diff.
Number of patients	326,256	20,779	354,219	29,159	833,830	41,144	1,514,305	91,082	
Age									
mean (sd)	69.39 (8.53)	66.00 (8.42)	66.17 (9.47)	64.01 (8.25)	74.47 (7.32)	73.88 (6.93)	71.43 (8.13)	68.92 (7.72)	0.32
median [IQR]	69.00 [64.00, 75.00]	65.00 [60.00, 71.00]	64.00 [60.00, 72.00]	62.00 [59.00, 68.00]	73.00 [68.00, 79.00] 3.	.00 [68.00, 78.00]	70.03 (8.13)	67.65 (7.72)	0.30
Age categories									
18 - 54; n (%)	8,369 (2.6%)	923 (4.4%)	14,650 (4.1%)	1,527 (5.2%)	0 (0.0%)	0 (0.0%)	23,019 (1.5%)	2,450 (2.7%)	-0.08
55 - 64; n (%)	81,938 (25.1%)	8,844 (42.6%)	180,842 (51.1%)	17,427 (59.8%)	14,366 (1.7%)	758 (1.8%)	277,146 (18.3%)	27,029 (29.7%)	-0.27
65 - 74; n (%)	144,642 (44.3%)	7,473 (36.0%)	86,662 (24.5%)	6,582 (22.6%)	457,643 (54.9%)	23,716 (57.6%)	688,947 (45.5%)	37,771 (41.5%)	0.08
>= 75; n (%)	91,307 (28.0%)	3,539 (17.0%)	72,065 (20.3%)	3,623 (12.4%)	361,821 (43.4%)	16,670 (40.5%)	525,193 (34.7%)	23,832 (26.2%)	0.19
Gender									
Males; n (%)	182,712 (56.0%)	12,150 (58.5%)	220,912 (62.4%)	18,053 (61.9%)	392,996 (47.1%)	18,280 (44.4%)	796,620 (52.6%)	48,483 (53.2%)	-0.01
Females; n (%)	143,544 (44.0%)	8,629 (41.5%)	133,307 (37.6%)	11,106 (38.1%)	440,834 (52.9%)	22,864 (55.6%)	717,685 (47.4%)	42,599 (46.8%)	0.01
Race									
White; n (%)	N/A	N/A	N/A	N/A	646,820 (77.6%)	30,782 (74.8%)	646,820 (77.6%)	30,782 (74.8%)	0.07
Black; n (%)	N/A	N/A	N/A	N/A	96,934 (11.6%)	4,514 (11.0%)	96,934 (11.6%)	4,514 (11.0%)	0.02
Asian; n (%)	N/A	N/A	N/A	N/A	27,110 (3.3%)	1,951 (4.7%)	27,110 (3.3%)	1,951 (4.7%)	-0.07
Hispanic; n (%)	N/A	N/A	N/A	N/A	32,513 (3.9%)	1,896 (4.6%)	32,513 (3.9%)	1,896 (4.6%)	-0.03
North American Native; n (%)	N/A	N/A	N/A	N/A	5,488 (0.7%)	541 (1.3%)	5,488 (0.7%)	541 (1.3%)	-0.06
Other/Unknown; n (%)	N/A	N/A	N/A	N/A	24,965 (3.0%)	1,460 (3.5%)	24,965 (3.0%)	1,460 (3.5%)	-0.03
Region (lumping missing&other category with West)									
Northeast; n (%)	33,392 (10.2%)	2,359 (11.4%)	57,349 (16.2%)	5,959 (20.4%)	140,063 (16.8%)	8,083 (19.6%)	230,804 (15.2%)	16,401 (18.0%)	-0.08
South; n (%)	150,301 (46.1%)	11,451 (55.1%)	102,784 (29.0%)	6,008 (20.6%)	354,867 (42.6%)	18,938 (46.0%)	607,952 (40.1%)	36,397 (40.0%)	0.00
Midwest; n (%)	66,450 (20.4%)	3,702 (17.8%)	136,078 (38.4%)	14,097 (48.3%)	201,736 (24.2%)	7,132 (17.3%)	404,264 (26.7%)	24,931 (27.4%)	-0.02
West; n (%)	76,113 (23.3%)	3,267 (15.7%)	54,627 (15.4%)	2,738 (9.4%)	137,164 (16.4%)	6,991 (17.0%)	267,904 (17.7%)	12,996 (14.3%)	0.09
Unknown+missing; n (%)	N/A	N/A	3,381 (1.0%)	357 (1.2%)	N/A	N/A	3,381 (1.0%)	357 (1.2%)	-0.02
CV Covariates									
Ischemic heart disease; n (%)	77,524 (23.8%)	4,616 (22.2%)	77,899 (22.0%)	6,045 (20.7%)	244,727 (29.3%)	11,984 (29.1%)	400,150 (26.4%)	22,645 (24.9%)	0.03
Acute MI; n (%)	5,645 (1.7%)	244 (1.2%)	5,977 (1.7%)	300 (1.0%)	13,796 (1.7%)	471 (1.1%)	25,418 (1.7%)	1,015 (1.1%)	0.05
ACS/unstable angina; n (%)	5,370 (1.6%)	311 (1.5%)	5,093 (1.4%)	374 (1.3%)	12,672 (1.5%)	589 (1.4%)	23,135 (1.5%)	1,274 (1.4%)	0.01
Old MI; n (%)	11,253 (3.4%)	524 (2.5%)	6,653 (1.9%)	415 (1.4%)	32,969 (4.0%)	1,318 (3.2%)	50,875 (3.4%)	2,257 (2.5%)	0.05
Stable angina; n (%)	11,196 (3.4%)	662 (3.2%)	9,411 (2.7%)	729 (2.5%)	28,061 (3.4%)	1,494 (3.6%)	48,668 (3.2%)	2,885 (3.2%)	0.00
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Coronary atherosclerosis and other forms of chronic ischer	71,276 (21.8%)	4,252 (20.5%)	71,475 (20.2%)	5,543 (19.0%)	232,887 (27.9%)	11,360 (27.6%)	375,638 (24.8%)	21,155 (23.2%)	0.04
Other atherosclerosis with ICD10; n (%)	3,928 (1.2%)	253 (1.2%)	3,704 (1.0%)	366 (1.3%)	15,620 (1.9%)	937 (2.3%)	23,252 (1.5%)	1,556 (1.7%)	-0.02
Description and in a constant (CARC or DTCA or Stant) at (0)	3,263 (1.0%)	166 (0.8%)	4,032 (1.1%)	199 (0.7%)	6,282 (0.8%)	233 (0.6%)	13,577 (0.9%)	598 (0.7%)	0.02
Previous cardiac procedure (CABG or PTCA or Stent); n (%)				693 (2.4%)	68,080 (8.2%)		95,808 (6.3%)		0.02
History of CABG or PTCA; n (%) Any stroke; n (%)	18,034 (5.5%) 21,878 (6.7%)	932 (4.5%) 1,285 (6.2%)	9,694 (2.7%) 20,004 (5.6%)	1,583 (5.4%)	77,966 (9.4%)	2,852 (6.9%) 3,882 (9.4%)	119,848 (7.9%)	4,477 (4.9%)	0.06
Ally Stroke, II (%)	21,070 (0.7%)	1,203 (0.2%)	20,004 (3.6%)	1,365 (3.4%)	77,900 (9.4%)	3,002 (9.4%)	119,040 (7.9%)	6,750 (7.4%)	0.02
Ischemic stroke (w and w/o mention of cerebral infarction)	21,575 (6.6%)	1,270 (6.1%)	19,796 (5.6%)	1,569 (5.4%)	76,960 (9.2%)	3,839 (9.3%)	118,331 (7.8%)	6,678 (7.3%)	0.02
Hemorrhagic stroke; n (%)	640 (0.2%)	30 (0.1%)	511 (0.1%)	33 (0.1%)	2,152 (0.3%)	90 (0.2%)	3,303 (0.2%)	153 (0.2%)	0.00
TIA; n (%)	4,889 (1.5%)	289 (1.4%)	4,657 (1.3%)	335 (1.1%)	17,677 (2.1%)	873 (2.1%)	27,223 (1.8%)	1,497 (1.6%)	0.02
Other cerebrovascular disease; n (%)	6,171 (1.9%)	298 (1.4%)	4,655 (1.3%)	289 (1.0%)	23,758 (2.8%)	984 (2.4%)	34,584 (2.3%)	1,571 (1.7%)	0.02
Late effects of cerebrovascular disease; n (%)	6,142 (1.9%)	291 (1.4%)	3,963 (1.1%)	220 (0.8%)	22,614 (2.7%)	826 (2.0%)	32,719 (2.2%)	1,337 (1.5%)	0.04
Cerebrovascular procedure; n (%)	295 (0.1%)	15 (0.1%)	335 (0.1%)	29 (0.1%)	801 (0.1%)	26 (0.1%)	1,431 (0.1%)	70 (0.1%)	0.00
Heart failure (CHF); n (%)	29,195 (8.9%)	1,231 (5.9%)	23,300 (6.6%)	1,274 (4.4%)	99,329 (11.9%)	4,239 (10.3%)	151,824 (10.0%)	6,744 (7.4%)	0.00
The Charles (Critis), in (70)	23,133 (0.3%)	1,231 (3.3/6)	23,300 (0.0%)	1,2/4(4.470)	33,323 (11.370)	7,233 (10.370)	131,024 (10.0%)	0,/44 (/.4/0)	0.09
Peripheral Vascular Disease (PVD) or PVD Surgery ; n (%)	25,929 (7.9%)	1,480 (7.1%)	20,526 (5.8%)	1,704 (5.8%)	94,220 (11.3%)	4,860 (11.8%)	140,675 (9.3%)	8,044 (8.8%)	0.02
Atrial fibrillation; n (%)	26,603 (8.2%)	1,219 (5.9%)	23,512 (6.6%)	1,393 (4.8%)	104,219 (12.5%)	4,452 (10.8%)	154,334 (10.2%)	7,064 (7.8%)	0.02
Other cardiac dysrhythmia; n (%)	29,510 (9.0%)	1,327 (6.4%)	23,209 (6.6%)	1,413 (4.8%)	105,401 (12.6%)	4,442 (10.8%)	158,120 (10.4%)	7,182 (7.9%)	0.09
Cardiac conduction disorders; n (%)	9,152 (2.8%)	406 (2.0%)	7,170 (2.0%)	396 (1.4%)	35,402 (4.2%)	1,404 (3.4%)	51,724 (3.4%)	2,206 (2.4%)	0.06
Other CVD; n (%)	37,124 (11.4%)	1,993 (9.6%)	32,930 (9.3%)	2,357 (8.1%)	126,705 (15.2%)	6,323 (15.4%)	196,759 (13.0%)	10,673 (11.7%)	0.04
Diabetes-related complications	,,(,70)	_,555 (5.070)	,550 (5.570)	_,557 (0.170)	, 00 (10.270)	-, (20)	, 55 (25.070)	,-, 5 (22.,,0)	0.04
Diabetic retinopathy; n (%)	18,310 (5.6%)	1,007 (4.8%)	13,846 (3.9%)	1,018 (3.5%)	51,299 (6.2%)	2,806 (6.8%)	83,455 (5.5%)	4,831 (5.3%)	0.01
Brabetie retinopatiny, in (70)	10,510 (5.070)	1,007 (1.070)	13,0 10 (3.370)	1,010 (5.570)	31,233 (0.276)	2,000 (0.0%)	03,133 (3.370)	1,051 (5.5%)	0.01
Diabetes with other ophthalmic manifestations; n (%)	1,878 (0.6%)	75 (0.4%)	10,886 (3.1%)	927 (3.2%)	21,591 (2.6%)	1,320 (3.2%)	34,355 (2.3%)	2,322 (2.5%)	-0.01
Retinal detachment, vitreous hemorrhage, vitrectomy; n (9	1,193 (0.4%)	81 (0.4%)	1,053 (0.3%)	86 (0.3%)	3,016 (0.4%)	146 (0.4%)	5,262 (0.3%)	313 (0.3%)	0.00
Retinal laser coagulation therapy; n (%)	1,780 (0.5%)	105 (0.5%)	2,021 (0.6%)	164 (0.6%)	4,269 (0.5%)	275 (0.7%)	8,070 (0.5%)	544 (0.6%)	-0.01
Occurrence of Diabetic Neuropathy ; n (%)	53,488 (16.4%)	2,860 (13.8%)	34,395 (9.7%)	2,354 (8.1%)	141,342 (17.0%)	7,059 (17.2%)	229,225 (15.1%)	12,273 (13.5%)	0.05
Occurrence of diabetic nephropathy with ICD10; n (%)	42,970 (13.2%)	1,931 (9.3%)	18,676 (5.3%)	1,038 (3.6%)	70,413 (8.4%)	3,133 (7.6%)	132,059 (8.7%)	6,102 (6.7%)	0.08
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Hypoglycemia; n (%)	8,609 (2.6%)	520 (2.5%)	11,572 (3.3%)	710 (2.4%)	24,098 (2.9%)	1,309 (3.2%)	44,279 (2.9%)	2,539 (2.8%)	0.01
Hyperglycemia; n (%)	14,232 (4.4%)	915 (4.4%)	10,618 (3.0%)	934 (3.2%)	40,740 (4.9%)	1,907 (4.6%)	65,590 (4.3%)	3,756 (4.1%)	0.01
Disorders of fluid electrolyte and acid-base balance; n (%)	27,078 (8.3%)	1,202 (5.8%)	20,401 (5.8%)	1,090 (3.7%)	87,411 (10.5%)	3,443 (8.4%)	134,890 (8.9%)	5,735 (6.3%)	0.10
Diabetic ketoacidosis; n (%)	1,479 (0.5%)	80 (0.4%)	1,620 (0.5%)	97 (0.3%)	3,796 (0.5%)	185 (0.4%)	6,895 (0.5%)	362 (0.4%)	0.01
Diabetic Retoucidosis, ii (70)	1,475 (0.570)	00 (0.470)	1,020 (0.5%)	37 (0.370)	3,730 (0.370)	103 (0.470)	0,055 (0.570)	302 (0.470)	0.01
U	1 712 (0 50/)	00 (0 5%)	1 402 (0 49/)	00 (0. 20/)	4 340 (0 50/)	100 (0 50/)	7 225 (0 5%)	276 (0.49/)	0.01
Hyperosmolar hyperglycemic nonketotic syndrome (HONK	1,713 (0.5%)	98 (0.5%)	1,402 (0.4%)	88 (0.3%)	4,210 (0.5%)	190 (0.5%)	7,325 (0.5%)	376 (0.4%)	0.01
Diabetes with peripheral circulatory disorders with ICD-10	22,010 (6.7%)	1,121 (5.4%)	12,150 (3.4%)	836 (2.9%)	61,626 (7.4%)	2,985 (7.3%)	95,786 (6.3%)	4,942 (5.4%)	0.04
Diabetic Foot; n (%)	7,372 (2.3%)	325 (1.6%)	7,747 (2.2%)	424 (1.5%)	24,279 (2.9%)	1,019 (2.5%)	39,398 (2.6%)	1,768 (1.9%)	0.05
Gangrene ; n (%)	948 (0.3%)	38 (0.2%)	1,009 (0.3%)	41 (0.1%)	2,368 (0.3%)	65 (0.2%)	4,325 (0.3%)	144 (0.2%)	0.02
Lower extremity amputation; n (%)	2,039 (0.6%)	72 (0.3%)	1,321 (0.4%)	53 (0.2%)	5,746 (0.7%)	177 (0.4%)	9,106 (0.6%)	302 (0.3%)	0.04
Osteomyelitis; n (%)	2,044 (0.6%)	90 (0.4%)	2,207 (0.6%)	123 (0.4%)	5,461 (0.7%)	192 (0.5%)	9,712 (0.6%)	405 (0.4%)	0.03
Skin infections ; n (%)	18,023 (5.5%)	972 (4.7%)	19,814 (5.6%)	1,383 (4.7%)	58,702 (7.0%)	2,771 (6.7%)	96,539 (6.4%)	5,126 (5.6%)	0.03
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Erectile dysfunction; n (%)	9,449 (2.9%)	765 (3.7%)	8,064 (2.3%)	706 (2.4%)	18,682 (2.2%)	1,044 (2.5%)	36,195 (2.4%)	2,515 (2.8%)	-0.03
Diabetes with unspecified complication; n (%)	14,017 (4.3%)	812 (3.9%)	10,738 (3.0%)	799 (2.7%)	35,652 (4.3%)	1,619 (3.9%)	60,407 (4.0%)	3,230 (3.5%)	0.03
Diabetes mellitus without mention of complications; n (%)	292,730 (89.7%)	19,178 (92.3%)	332,349 (93.8%)	28,174 (96.6%)	787,651 (94.5%)	39,585 (96.2%)	1,412,730 (93.3%)	86,937 (95.4%)	-0.09
Hypertension: 1 inpatient or 2 outpatient claims within 36	265,847 (81.5%)	16,982 (81.7%)	231,281 (65.3%)	19,548 (67.0%)	738,732 (88.6%)	36,794 (89.4%)	1,235,860 (81.6%)	73,324 (80.5%)	0.03
Hyperlipidemia; n (%)	232,236 (71.2%)	16,351 (78.7%)	197,940 (55.9%)	18,164 (62.3%)	622,378 (74.6%)	33,571 (81.6%)	1,052,554 (69.5%)	68,086 (74.8%)	-0.12
Edema; n (%)	21,485 (6.6%)	1,155 (5.6%)	15,660 (4.4%)	1,142 (3.9%)	79,196 (9.5%)	3,623 (8.8%)	116,341 (7.7%)	5,920 (6.5%)	0.05
	70,481 (21.6%)	3,338 (16.1%)	43,795 (12.4%)	2,667 (9.1%)	188,756 (22.6%)	8,462 (20.6%)	303,032 (20.0%)	14,467 (15.9%)	0.11
Renal Dysfunction (non-diabetic); n (%)									
Occurrence of acute renal disease ; n (%)	12,784 (3.9%)	473 (2.3%)	10,177 (2.9%)	435 (1.5%)	39,490 (4.7%)	1,234 (3.0%)	62,451 (4.1%)	2,142 (2.4%)	0.10
Occurrence of chronic renal insufficiency; n (%)	56,143 (17.2%)	2,604 (12.5%)	29,119 (8.2%)	1,715 (5.9%)	147,896 (17.7%)	6,643 (16.1%)	233,158 (15.4%)	10,962 (12.0%)	0.10
Chronic kidney disease ; n (%)	53,648 (16.4%)	2,483 (11.9%)	27,764 (7.8%)	1,645 (5.6%)	139,695 (16.8%)	6,214 (15.1%)	221,107 (14.6%)	10,342 (11.4%)	0.10
CKD Stage 3-4; n (%)	35,821 (11.0%)	1,590 (7.7%)	17,504 (4.9%)	994 (3.4%)	94,805 (11.4%)	4,042 (9.8%)	148,130 (9.8%)	6,626 (7.3%)	0.09
Occurrence of hypertensive nephropathy; n (%)	24,104 (7.4%)	1,008 (4.9%)	11,427 (3.2%)	636 (2.2%)	66,301 (8.0%)	2,658 (6.5%)	101,832 (6.7%)	4,302 (4.7%)	0.09
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Occurrence of miscellaneous renal insufficiency; n (%)	19,938 (6.1%)	1,040 (5.0%)	14,640 (4.1%)	974 (3.3%)	65,967 (7.9%)	3,095 (7.5%)	100,545 (6.6%)	5,109 (5.6%)	0.04
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Glaucoma or cataracts ; n (%)	65,950 (20.2%)	3,870 (18.6%)	55,781 (15.7%)	4,474 (15.3%)	215,464 (25.8%)	11,810 (28.7%)	337,195 (22.3%)	20,154 (22.1%)	
Cellulitis or abscess of toe; n (%)	3,999 (1.2%)	184 (0.9%)	3,342 (0.9%)	184 (0.6%)	10,892 (1.3%)	352 (0.9%)	18,233 (1.2%)	720 (0.8%)	0.04
Foot ulcer; n (%)	7,328 (2.2%)	320 (1.5%)	7,845 (2.2%)	438 (1.5%)	24,448 (2.9%)	1,031 (2.5%)	39,621 (2.6%)	1,789 (2.0%)	0.04
Bladder stones; n (%)	514 (0.2%)	33 (0.2%)	456 (0.1%)	33 (0.1%)	1,745 (0.2%)	75 (0.2%)	2,715 (0.2%)	141 (0.2%)	0.00
Kidney stones; n (%)	7,301 (2.2%)	502 (2.4%)	7,485 (2.1%)	627 (2.2%)	22,828 (2.7%)	1,199 (2.9%)	37,614 (2.5%)	2,328 (2.6%)	-0.01
Urinary tract infections (UTIs); n (%)	31,174 (9.6%)	1,703 (8.2%)	22,900 (6.5%)	1,726 (5.9%)	121,013 (14.5%)	6,278 (15.3%)	175,087 (11.6%)	9,707 (10.7%)	0.03
Dipstick urinalysis; n (%)	112,162 (34.4%)	7,907 (38.1%)	100,855 (28.5%)	9,925 (34.0%)	333,745 (40.0%)	18,914 (46.0%)	546,762 (36.1%)	36,746 (40.3%)	-0.09
			95,471 (27.0%)						-0.03
Non-dipstick urinalysis; n (%)	122,036 (37.4%)	8,383 (40.3%)		9,302 (31.9%)	302,108 (36.2%)	16,602 (40.4%)	519,615 (34.3%)	34,287 (37.6%)	
Urine function test; n (%)	8,516 (2.6%)	522 (2.5%)	9,123 (2.6%)	798 (2.7%)	30,598 (3.7%)	1,710 (4.2%)	48,237 (3.2%)	3,030 (3.3%)	-0.01
Cytology; n (%)	3,963 (1.2%)	221 (1.1%)	5,092 (1.4%)	393 (1.3%)	13,903 (1.7%)	757 (1.8%)	22,958 (1.5%)	1,371 (1.5%)	0.00
Cystos; n (%)	5,503 (1.7%)	351 (1.7%)	6,722 (1.9%)	535 (1.8%)	19,356 (2.3%)	979 (2.4%)	31,581 (2.1%)	1,865 (2.0%)	0.01
Other Covariates									
Liver disease; n (%)	15.381 (4.7%)	1,008 (4.9%)	13,265 (3.7%)	952 (3.3%)	40.486 (4.9%)	2,120 (5.2%)	69,132 (4.6%)	4,080 (4.5%)	0.00
Osteoarthritis; n (%)	49,801 (15.3%)	2,939 (14.1%)	39,609 (11.2%)	3,067 (10.5%)	183,282 (22.0%)	9,595 (23.3%)	272,692 (18.0%)	15,601 (17.1%)	0.02
oscouremens, in (70)	15,001 (15.570)	2,555 (176)	33,003 (11.270)	3,007 (20.370)	100,202 (22.070)	3,333 (23.370)	2,2,032 (10.070)	15,001 (17.170)	0.02
Other arthritis, arthropathies and musculoskeletal pain; n	109,875 (33.7%)	6.759 (32.5%)	103,014 (29.1%)	8,257 (28.3%)	361,926 (43.4%)	18,292 (44.5%)	574,815 (38.0%)	33,308 (36.6%)	0.03
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Dorsopathies; n (%)	66,258 (20.3%)	4,112 (19.8%)	59,248 (16.7%)	4,994 (17.1%)	213,504 (25.6%)	11,236 (27.3%)	339,010 (22.4%)	20,342 (22.3%)	0.00
Fractures; n (%)	10,142 (3.1%)	464 (2.2%)	9,882 (2.8%)	624 (2.1%)	35,412 (4.2%)	1,478 (3.6%)	55,436 (3.7%)	2,566 (2.8%)	0.05
Falls ; n (%)	11,108 (3.4%)	421 (2.0%)	3,800 (1.1%)	172 (0.6%)	39,560 (4.7%)	1,361 (3.3%)	54,468 (3.6%)	1,954 (2.1%)	0.09
Osteoporosis; n (%)	16,292 (5.0%)	1,166 (5.6%)	11,172 (3.2%)	1,105 (3.8%)	61,430 (7.4%)	4,453 (10.8%)	88,894 (5.9%)	6,724 (7.4%)	-0.06
Hyperthyroidism; n (%)	1,991 (0.6%)	142 (0.7%)	1,498 (0.4%)	145 (0.5%)	7,561 (0.9%)	456 (1.1%)	11,050 (0.7%)	743 (0.8%)	-0.01
Hypothyroidism ; n (%)	46,694 (14.3%)	3,122 (15.0%)	31,244 (8.8%)	2,932 (10.1%)	125,308 (15.0%)	8,092 (19.7%)	203,246 (13.4%)	14,146 (15.5%)	-0.06
Other disorders of thyroid gland ; n (%)	9,131 (2.8%)	731 (3.5%)	7,621 (2.2%)	889 (3.0%)	30,404 (3.6%)	2,249 (5.5%)	47,156 (3.1%)	3,869 (4.2%)	-0.06
				, ,					0.05
Depression; n (%)	25,425 (7.8%)	1,395 (6.7%)	20,171 (5.7%)	1,455 (5.0%)	90,154 (10.8%)	4,150 (10.1%)	135,750 (9.0%)	7,000 (7.7%)	
Anxiety; n (%)	20,439 (6.3%)	1,110 (5.3%)	13,227 (3.7%)	976 (3.3%)	69,211 (8.3%)	3,190 (7.8%)	102,877 (6.8%)	5,276 (5.8%)	0.04
Sleep_Disorder; n (%)	22,256 (6.8%)	1,819 (8.8%)	29,227 (8.3%)	2,945 (10.1%)	65,850 (7.9%)	3,795 (9.2%)	117,333 (7.7%)	8,559 (9.4%)	-0.06
Dementia; n (%)	14,761 (4.5%)	513 (2.5%)	9,793 (2.8%)	417 (1.4%)	70,951 (8.5%)	2,659 (6.5%)	95,505 (6.3%)	3,589 (3.9%)	0.11
Delirium; n (%)	4,546 (1.4%)	127 (0.6%)	3,729 (1.1%)	136 (0.5%)	19,145 (2.3%)	577 (1.4%)	27,420 (1.8%)	840 (0.9%)	0.08
Psychosis; n (%)	3,765 (1.2%)	125 (0.6%)	2,978 (0.8%)	139 (0.5%)	19,739 (2.4%)	696 (1.7%)	26,482 (1.7%)	960 (1.1%)	0.05
Obesity; n (%)	40,498 (12.4%)	2,590 (12.5%)	25,265 (7.1%)	1,801 (6.2%)	85,113 (10.2%)	4,257 (10.3%)	150,876 (10.0%)	8,648 (9.5%)	0.02
* * *									0.02
Overweight; n (%)	13,422 (4.1%)	748 (3.6%)	4,458 (1.3%)	279 (1.0%)	24,959 (3.0%)	1,164 (2.8%)	42,839 (2.8%)	2,191 (2.4%)	
Smoking; n (%)	33,167 (10.2%)	1,667 (8.0%)	17,912 (5.1%)	1,207 (4.1%)	107,772 (12.9%)	4,199 (10.2%)	158,851 (10.5%)	7,073 (7.8%)	0.09
Alcohol abuse or dependence; n (%)	3,462 (1.1%)	152 (0.7%)	2,699 (0.8%)	134 (0.5%)	7,115 (0.9%)	249 (0.6%)	13,276 (0.9%)	535 (0.6%)	0.03
Drug abuse or dependence; n (%)	3,665 (1.1%)	169 (0.8%)	1,731 (0.5%)	101 (0.3%)	7,330 (0.9%)	281 (0.7%)	12,726 (0.8%)	551 (0.6%)	0.02
COPD; n (%)	31,399 (9.6%)	1,481 (7.1%)	23,290 (6.6%)	1,501 (5.1%)	100,010 (12.0%)	4,618 (11.2%)	154,699 (10.2%)	7,600 (8.3%)	0.07
Asthma; n (%)	15,300 (4.7%)	1,013 (4.9%)	13,235 (3.7%)	1,110 (3.8%)	47,155 (5.7%)	2,619 (6.4%)	75,690 (5.0%)	4,742 (5.2%)	-0.01
Obstructive sleep apnea; n (%)	22,004 (6.7%)	1,612 (7.8%)	25,186 (7.1%)	2,287 (7.8%)	46,520 (5.6%)	2,191 (5.3%)	93,710 (6.2%)	6,090 (6.7%)	-0.02
Table Steep aprica, in (10)	22,007 (0.770)	1,012 (7.070)	23,200 (7.270)	2,207 (7.070)	.5,520 (5.070)	2,232 (3.3/0)	33,, 10 (0.2/0)	3,030 (0.770)	3.02

Pneumonia; n (%)	10,170 (3.1%)	378 (1.8%)	10,127 (2.9%)	466 (1.6%)	34,226 (4.1%)	1,258 (3.1%)	54,523 (3.6%)	2,102 (2.3%)	0.08
Imaging; n (%)	538 (0.2%)	19 (0.1%)	348 (0.1%)	17 (0.1%)	1,552 (0.2%)	51 (0.1%)	2,438 (0.2%)	87 (0.1%)	0.03
Diabetes Medications	(5.2.7.)	(2 12 (21211)		_,(,	()	_, (,	0. (0.2)	
	005 (0.20()	65 (0.20()	4 070 (0 20()	00 (0 20()	2 027 (0 20()	402 (0.50()	1 000 (0 20()	220 (0.40()	-0.02
DM Medications - AGIs; n (%)	985 (0.3%)	65 (0.3%)	1,078 (0.3%)	80 (0.3%)	2,837 (0.3%)	193 (0.5%)	4,900 (0.3%)	338 (0.4%)	
DM Medications - Glitazones; n (%)	27,778 (8.5%)	2,623 (12.6%)	41,989 (11.9%)	5,550 (19.0%)	52,109 (6.2%)	4,431 (10.8%)	121,876 (8.0%)	12,604 (13.8%)	-0.19
DM Medications - GLP-1 RA; n (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	#VALUE!	#VALUE!	#VALUE!
DM Medications - Insulin; n (%)	41,105 (12.6%)	3,173 (15.3%)	44,462 (12.6%)	3,879 (13.3%)	128,124 (15.4%)	7,653 (18.6%)	213,691 (14.1%)	14,705 (16.1%)	-0.06
DM Medications - Meglitinides; n (%)	2,106 (0.6%)	338 (1.6%)	3,358 (0.9%)	778 (2.7%)	8,523 (1.0%)	1,131 (2.7%)	13,987 (0.9%)	2,247 (2.5%)	-0.12
DM Medications - Metformin; n (%)	207,824 (63.7%)	14,677 (70.6%)	226,946 (64.1%)	21,126 (72.5%)	513,950 (61.6%)	27,402 (66.6%)	948,720 (62.7%)	63,205 (69.4%)	-0.14
Similar decisions interiorinin, in (70)	207,02 1 (03.770)	11,077 (70.070)	220,5 10 (0 112/0)	21,120 (/ 2.5/0)	313,330 (01.070)	27,102 (00.070)	3 10,720 (02.770)	03,203 (03.170)	0.11
Concomitant initiation or current use of SGLT2i; n (%)	3,977 (1.2%)	540 (2.6%)	3,386 (1.0%)	349 (1.2%)	6,088 (0.7%)	516 (1.3%)	13,451 (0.9%)	1,405 (1.5%)	-0.06
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Concomitant initiation or current use of AGIs; n (%)	723 (0.2%)	45 (0.2%)	806 (0.2%)	49 (0.2%)	2,021 (0.2%)	125 (0.3%)	3,550 (0.2%)	219 (0.2%)	0.00
Concomitant initiation or current use of Glitazones; n (%)	20,847 (6.4%)	1,496 (7.2%)	32,237 (9.1%)	3,195 (11.0%)	39,728 (4.8%)	2,670 (6.5%)	92,812 (6.1%)	7,361 (8.1%)	-0.08
Concomitant initiation or current use of GLP-1 RA; n (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	#VALUE!	#VALUE!	#VALUE!
Concomitant initiation or current use of Insulin; n (%)	28,494 (8.7%)	2,341 (11.3%)	32,172 (9.1%)	2,912 (10.0%)	90,757 (10.9%)	5,821 (14.1%)	151,423 (10.0%)	11,074 (12.2%)	-0.07
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Concomitant initiation or current use of Meglitinides; n (%	1,207 (0.4%)	240 (1.2%)	2,091 (0.6%)	562 (1.9%)	5,382 (0.6%)	801 (1.9%)	8,680 (0.6%)	1,603 (1.8%)	-0.11
conconitant initiation of current use of wegittinges, if (70	1,207 (0.470)	240 (1.270)	2,031 (0.0%)	302 (1.370)	3,302 (0.070)	001 (1.570)	0,000 (0.0%)	1,003 (1.070)	0.11
C	476 567 (54 49/)	42.740 (64.20()	402 042 (54 70)	40 422 (62 20()	424 440 (52 40()	22 202 (56 60()	004 700 (52 40)	54 455 (50 00()	0.44
Concomitant initiation or current use of Metformin; n (%)	176,567 (54.1%)	12,740 (61.3%)	193,813 (54.7%)	18,432 (63.2%)	434,419 (52.1%)	23,283 (56.6%)	804,799 (53.1%)	54,455 (59.8%)	-0.14
Past use of SGLT2i; n (%)	1,845 (0.6%)	234 (1.1%)	1,223 (0.3%)	119 (0.4%)	3,419 (0.4%)	197 (0.5%)	6,487 (0.4%)	550 (0.6%)	-0.03
Past use of AGIs; n (%)	262 (0.1%)	20 (0.1%)	272 (0.1%)	31 (0.1%)	816 (0.1%)	68 (0.2%)	1,350 (0.1%)	119 (0.1%)	0.00
Past use of Glitazones; n (%)	6,931 (2.1%)	1,127 (5.4%)	9,754 (2.8%)	2,355 (8.1%)	12,381 (1.5%)	1,761 (4.3%)	29,066 (1.9%)	5,243 (5.8%)	-0.20
Past use of GLP-1 RA; n (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	#VALUE!	000 (0.0%)	#VALUE!
Past use of Insulin; n (%)	12,612 (3.9%)	832 (4.0%)	12,290 (3.5%)	967 (3.3%)	37,375 (4.5%)	1,832 (4.5%)	62,277 (4.1%)	3,631 (4.0%)	0.01
Past use of Meglitinides; n (%)	899 (0.3%)	98 (0.5%)	1,267 (0.4%)	216 (0.7%)	3,141 (0.4%)	330 (0.8%)	5,307 (0.4%)	644 (0.7%)	-0.04
Past use of metformin (final); n (%)	31,257 (9.6%)	1,937 (9.3%)	33,134 (9.4%)	2,694 (9.2%)	79,531 (9.5%)	4,119 (10.0%)	143,922 (9.5%)	8,750 (9.6%)	0.00
Other Medications									
Use of ACE inhibitors; n (%)	155,292 (47.6%)	8,589 (41.3%)	168,841 (47.7%)	12,185 (41.8%)	380,058 (45.6%)	16,298 (39.6%)	704,191 (46.5%)	37,072 (40.7%)	0.12
Use of ARBs; n (%)	74,753 (22.9%)	6,018 (29.0%)	85,503 (24.1%)	9,060 (31.1%)	213,647 (25.6%)	13,949 (33.9%)	373,903 (24.7%)	29,027 (31.9%)	-0.16
Use of Loop Diuretics ; n (%)	45,732 (14.0%)	2,095 (10.1%)	47,287 (13.3%)	2,970 (10.2%)	163,097 (19.6%)	7,190 (17.5%)	256,116 (16.9%)	12,255 (13.5%)	0.09
Use of other diuretics; n (%)	9,584 (2.9%)	491 (2.4%)	10,328 (2.9%)	707 (2.4%)	30,836 (3.7%)	1,357 (3.3%)	50,748 (3.4%)	2,555 (2.8%)	0.03
Use of nitrates-United; n (%)	19,150 (5.9%)	970 (4.7%)	22,344 (6.3%)	1,429 (4.9%)	67,077 (8.0%)	3,287 (8.0%)	108,571 (7.2%)	5,686 (6.2%)	0.04
Use of other hypertension drugs; n (%)	25,970 (8.0%)	1,250 (6.0%)	26,097 (7.4%)	1,535 (5.3%)	75,683 (9.1%)	3,334 (8.1%)	127,750 (8.4%)	6,119 (6.7%)	0.06
Use of digoxin; n (%)	7,924 (2.4%)	368 (1.8%)	9,532 (2.7%)	605 (2.1%)	30,623 (3.7%)	1,512 (3.7%)	48,079 (3.2%)	2,485 (2.7%)	0.03
Use of Anti-arrhythmics; n (%)	5,069 (1.6%)	211 (1.0%)	6,091 (1.7%)	348 (1.2%)	19,073 (2.3%)	819 (2.0%)	30,233 (2.0%)	1,378 (1.5%)	0.04
Use of COPD/asthma meds; n (%)	40,979 (12.6%)	2,796 (13.5%)	46,482 (13.1%)	4,170 (14.3%)	129,633 (15.5%)	7,675 (18.7%)	217,094 (14.3%)	14,641 (16.1%)	-0.05
Use of statins; n (%)	206,872 (63.4%)	13,609 (65.5%)	220,717 (62.3%)	18,979 (65.1%)	541,625 (65.0%)	28,292 (68.8%)	969,214 (64.0%)	60,880 (66.8%)	-0.06
Use of other lipid-lowering drugs; n (%)	34,054 (10.4%)	2,947 (14.2%)	47,664 (13.5%)	4,901 (16.8%)	90,399 (10.8%)	5,974 (14.5%)	172,117 (11.4%)	13,822 (15.2%)	-0.11
Use of antiplatelet agents; n (%)	39,164 (12.0%)	2,606 (12.5%)	49,626 (14.0%)	4,089 (14.0%)	120,312 (14.4%)	6,953 (16.9%)	209,102 (13.8%)	13,648 (15.0%)	-0.03
Ose of anti-platelet agents, if (70)	39,104 (12.0%)	2,000 (12.3%)	43,020 (14.0%)	4,089 (14.0%)	120,312 (14.470)	0,333 (10.370)	203,102 (13.8%)	13,048 (13.0%)	-0.03
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Use of oral anticoagulants (Dabigatran, Rivaroxaban, Apixa	22,175 (6.8%)	1,078 (5.2%)	23,822 (6.7%)	1,445 (5.0%)	84,094 (10.1%)	3,537 (8.6%)	130,091 (8.6%)	6,060 (6.7%)	0.07
Use of heparin and other low-molecular weight heparins; n	1,612 (0.5%)	90 (0.4%)	105 (0.0%)	1 (0.0%)	4,807 (0.6%)	169 (0.4%)	6,524 (0.4%)	260 (0.3%)	0.02
Use of NSAIDs; n (%)	45,323 (13.9%)	3,100 (14.9%)	48,638 (13.7%)	4,344 (14.9%)	125,605 (15.1%)	7,302 (17.7%)	219,566 (14.5%)	14,746 (16.2%)	-0.05
Use of oral corticosteroids; n (%)	43,644 (13.4%)	2,665 (12.8%)	46,469 (13.1%)	3,678 (12.6%)	134,781 (16.2%)	6,572 (16.0%)	224,894 (14.9%)	12,915 (14.2%)	0.02
Use of bisphosphonate (United); n (%)	8,508 (2.6%)	603 (2.9%)	7,182 (2.0%)	637 (2.2%)	25,961 (3.1%)	1,971 (4.8%)	41,651 (2.8%)	3,211 (3.5%)	-0.04
Use of opioids; n (%)	78,095 (23.9%)	4,736 (22.8%)	88,854 (25.1%)	6,978 (23.9%)	219,576 (26.3%)	10,565 (25.7%)	386,525 (25.5%)	22,279 (24.5%)	0.02
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Use of antidepressants; n (%)	67,097 (20.6%)	4,035 (19.4%)	69,354 (19.6%)	5,621 (19.3%)	205,107 (24.6%)	10,384 (25.2%)	341,558 (22.6%)	20,040 (22.0%)	0.01
Use of antipsychotics; n (%)	7,040 (2.2%)	369 (1.8%)	6,306 (1.8%)	432 (1.5%)	29,618 (3.6%)	1,457 (3.5%)	42,964 (2.8%)	2,258 (2.5%)	0.02
Use of anticonvulsants; n (%)	44,305 (13.6%)	2,376 (11.4%)	37,580 (10.6%)	2,730 (9.4%)	135,780 (16.3%)	6,460 (15.7%)	217,665 (14.4%)	11,566 (12.7%)	0.05
Use of lithium; n (%)	406 (0.1%)	23 (0.1%)	511 (0.1%)	26 (0.1%)	1,154 (0.1%)	44 (0.1%)	2,071 (0.1%)	093 (0.1%)	0.00
Use of Benzos; n (%)	25,438 (7.8%)	1,649 (7.9%)	36,367 (10.3%)	2,964 (10.2%)	81,585 (9.8%)	3,787 (9.2%)	143,390 (9.5%)	8,400 (9.2%)	0.01
Use of anxiolytics/hypnotics; n (%)	17,416 (5.3%)	1,301 (6.3%)	21,131 (6.0%)	1,988 (6.8%)	51,549 (6.2%)	3,336 (8.1%)	90,096 (5.9%)	6,625 (7.3%)	-0.06
Use of dementia meds; n (%)	8,507 (2.6%)	361 (1.7%)	7,359 (2.1%)	365 (1.3%)	42,615 (5.1%)	2,350 (5.7%)	58,481 (3.9%)	3,076 (3.4%)	0.03
Use of antiparkinsonian meds; n (%)	7,238 (2.2%)	410 (2.0%)	7,186 (2.0%)	556 (1.9%)	27,741 (3.3%)	1,332 (3.2%)	42,165 (2.8%)	2,298 (2.5%)	0.02
Any use of pramlintide; n (%)	32 (0.0%)	11 (0.1%)	139 (0.0%)	38 (0.1%)	64 (0.0%)	12 (0.0%)	235 (0.0%)	061 (0.1%)	-0.04
Any use of 1st generation sulfonylureas; n (%)	133 (0.0%)	5 (0.0%)	465 (0.1%)	8 (0.0%)	538 (0.1%)	19 (0.0%)	1,136 (0.1%)	032 (0.0%)	0.00
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Entresto (sacubitril/valsartan); n (%)	250 (0.1%)	16 (0.1%)	58 (0.0%)	1 (0.0%)	320 (0.0%)	11 (0.0%)	628 (0.0%)	028 (0.0%)	0.00
Initiation as monotherapy ; n (%)	58,625 (18.0%)	4,352 (20.9%)	57,540 (16.2%)	5,432 (18.6%)	121,960 (14.6%)	6,427 (15.6%)	238,125 (15.7%)	16,211 (17.8%)	-0.06
Labs							680,475	49,938	
Lab values- HbA1c (%); n (%)	100,016 (30.7%)	7,392 (35.6%)	21,446 (6.1%)	1,595 (5.5%)	N/A	N/A	121,462 (17.8%)	8,987 (18.0%)	-0.01
Lab values- HbA1c (%) (within 3 months); n (%)	77,689 (23.8%)	5,930 (28.5%)	16,948 (4.8%)	1,266 (4.3%)	N/A	N/A	94,637 (13.9%)	7,196 (14.4%)	-0.01
Lab values- HbA1c (%) (within 6 months); n (%)	100,016 (30.7%)	7,392 (35.6%)	21,446 (6.1%)	1,595 (5.5%)	N/A	N/A	121,462 (17.8%)	8,987 (18.0%)	-0.01
Lab values- BNP; n (%)	1,893 (0.6%)	97 (0.5%)	259 (0.1%)	19 (0.1%)	N/A	N/A	2,152 (0.3%)	116 (0.2%)	0.02

Lab values- BNP (within 3 months); n (%)	1,190 (0.4%)	60 (0.3%)	174 (0.0%)	10 (0.0%)	N/A	N/A	1,364 (0.2%)	070 (0.1%)	0.03
			, ,						
Lab values- BNP (within 6 months); n (%)	1,893 (0.6%)	97 (0.5%)	259 (0.1%)	19 (0.1%)	N/A	N/A	2,152 (0.3%)	116 (0.2%)	0.02
Lab values- BUN (mg/dl); n (%)	102,893 (31.5%)	7,740 (37.2%)	15,379 (4.3%)	1,670 (5.7%)	N/A	N/A	118,272 (17.4%)	9,410 (18.8%)	-0.04
Lab values- BUN (mg/dl) (within 3 months); n (%)	79,292 (24.3%)	6,146 (29.6%)	11,735 (3.3%)	1,300 (4.5%)	N/A	N/A	91,027 (13.4%)	7,446 (14.9%)	-0.04
Lab values- BUN (mg/dl) (within 6 months); n (%)	102,893 (31.5%)	7,740 (37.2%)	15,379 (4.3%)	1,670 (5.7%)	N/A	N/A	118,272 (17.4%)	9,410 (18.8%)	-0.04
Lab values- Creatinine (mg/dl); n (%)	105,172 (32.2%)	7,907 (38.1%)	16,016 (4.5%)	1,728 (5.9%)	N/A	N/A	121,188 (17.8%)	9,635 (19.3%)	-0.04
Lab values- Creatifffie (ffig/uf) , ff (%)	103,172 (32.2%)	7,907 (56.1%)	16,016 (4.5%)	1,720 (3.9%)	N/A	IN/A	121,100 (17.0%)	9,055 (19.5%)	-0.04
Lab values- Creatinine (mg/dl) (within 3 months); n (%)	81,025 (24.8%)	6,286 (30.3%)	12,246 (3.5%)	1,342 (4.6%)	N/A	N/A	93,271 (13.7%)	7,628 (15.3%)	-0.05
Lab values ereactime (mg/ar/(wretimes months)) if (70)	02,023 (2 1.070)	0,200 (50.570)	12,2 10 (5.570)	2,5 12 (1.070)	,	14,71	33,272 (23.770)	7,020 (13.570)	0.03
Lab values- Creatinine (mg/dl) (within 6 months); n (%)	105,172 (32.2%)	7,907 (38.1%)	16,016 (4.5%)	1,728 (5.9%)	N/A	N/A	121,188 (17.8%)	9,635 (19.3%)	-0.04
Lab values- HDL level (mg/dl); n (%)	84,638 (25.9%)	6,626 (31.9%)	18,060 (5.1%)	1,484 (5.1%)	N/A	N/A	102,698 (15.1%)	8,110 (16.2%)	-0.03
Lab values- HDL level (mg/dl) (within 3 months); n (%)	61,783 (18.9%)	5,027 (24.2%)	13,316 (3.8%)	1,117 (3.8%)	N/A	N/A	75,099 (11.0%)	6,144 (12.3%)	-0.04
Lab values- HDE level (Hig/ul) (Within 5 Honths), II (%)	01,765 (16.9%)	3,027 (24.2%)	15,510 (5.6%)	1,117 (5.6%)	N/A	IN/A	75,099 (11.0%)	0,144 (12.5%)	-0.04
Lab values- HDL level (mg/dl) (within 6 months); n (%)	84,638 (25.9%)	6,626 (31.9%)	18,060 (5.1%)	1,484 (5.1%)	N/A	N/A	102,698 (15.1%)	8,110 (16.2%)	-0.03
Lab values- LDL level (mg/dl); n (%)	87,126 (26.7%)	6,698 (32.2%)	19,684 (5.6%)	1,508 (5.2%)	N/A	N/A	106,810 (15.7%)	8,206 (16.4%)	-0.02
1.1 1 1.21 1 1/ / 10/ / (//	62 562 (40 50()	5 004 (24 50()	44.500 (4.40()	4 422 (2 00()	***	** /*	70 074 (44 50()	6 227 (42 50()	0.00
Lab values- LDL level (mg/dl) (within 3 months); n (%)	63,562 (19.5%)	5,094 (24.5%)	14,509 (4.1%)	1,133 (3.9%)	N/A	N/A	78,071 (11.5%)	6,227 (12.5%)	-0.03
Lab values-LDL level (mg/dl) (within 6 months); n (%)	87,126 (26.7%)	6,698 (32.2%)	19,684 (5.6%)	1 500 (5 30/)	N/A	N/A	106,810 (15.7%)	8,206 (16.4%)	-0.02
, , , ,		. , ,	. , ,	1,508 (5.2%)	· ·				
Lab values- NT-proBNP; n (%)	260 (0.1%)	18 (0.1%)	20 (0.0%)	1 (0.0%)	N/A	N/A	280 (0.0%)	19 (0.0%)	#DIV/0!
Lab values- NT-proBNP (within 3 months); n (%)	161 (0.0%)	13 (0.1%)	12 (0.0%)	1 (0.0%)	N/A	N/A	173 (0.0%)	14 (0.0%)	-
Lab values- NT-proBNP (within 6 months); n (%)	260 (0.1%)	18 (0.1%)	20 (0.0%)	1 (0.0%)	N/A	N/A	280 (0.0%)	19 (0.0%)	-
	, ,		, ,	, ,			, ,	, ,	0.00
Lab values-Total cholesterol (mg/dl); n (%)	85,810 (26.3%)	6,733 (32.4%)	18,318 (5.2%)	1,521 (5.2%)	N/A	N/A	104,128 (15.3%)	8,254 (16.5%)	-0.03
Lab values-Total cholesterol (mg/dl) (within 3 months); n (62,648 (19.2%)	F 117 (24 CO/)	13,460 (3.8%)	1 1 17 (2 00/)	N/A	N/A	76,108 (11.2%)	C 2C4 (12 F9/)	-0.04
Lab values- rotal cholesterol (mg/ul) (within 5 months), if (02,048 (19.2%)	5,117 (24.6%)	13,460 (3.6%)	1,147 (3.9%)	N/A	IN/A	70,100 (11.2%)	6,264 (12.5%)	-0.04
Lab values-Total cholesterol (mg/dl) (within 6 months); n (85,810 (26.3%)	6,733 (32.4%)	18,318 (5.2%)	1,521 (5.2%)	N/A	N/A	104,128 (15.3%)	8,254 (16.5%)	-0.03
Lab values- Triglyceride level (mg/dl); n (%)	85,006 (26.1%)	6,707 (32.3%)	17,930 (5.1%)	1,485 (5.1%)	N/A	N/A	102,936 (15.1%)	8,192 (16.4%)	-0.04
Lab values-Triglyceride level (mg/dl) (within 3 months); n (62,117 (19.0%)	5,102 (24.6%)	13,198 (3.7%)	1,118 (3.8%)	N/A	N/A	75,315 (11.1%)	6,220 (12.5%)	-0.04
1.1 T.: 1 11.1 (IIV	05 006 (26 40()	6 707 (22 20)	47.020 (5.40()	4 405 (5 40()	***	** /*	402 026 (45 40/)	0.402 (46.40()	0.04
Lab values-Triglyceride level (mg/dl) (within 6 months); n (85,006 (26.1%)	6,707 (32.3%)	17,930 (5.1%)	1,485 (5.1%)	N/A	N/A	102,936 (15.1%)	8,192 (16.4%)	-0.04
Lab result number- HbA1c (%) mean (only 2 to 20 included)	99,508	7,371	16,692	1,504	N/A	N/A	116,200	8,875	
mean (sd)	8.02 (1.79)	7.95 (1.71)	8.15 (1.89)	8.03 (1.81)	N/A	N/A	8.04 (1.80)	7.96 (1.73)	0.05
median [IQR]	7.60 [6.80, 8.80]	7.50 [6.80, 8.65]	7.65 [6.90, 9.00]	7.50 [6.80, 8.70]	N/A	N/A	7.61 (1.80)	7.50 (1.73)	0.06
					· ·				
Missing; n (%)	226,748 (69.5%)	13,408 (64.5%)	337,527 (95.3%)	27,655 (94.8%)	N/A	N/A	564,275 (82.9%)	41,063 (82.2%)	0.02
Lab result number- BNP mean	1,893	97	259	19	N/A	N/A	2,152	116	
mean (sd)	225.59 (409.79)	152.44 (201.22)	261.61 (540.42)	238.55 (559.75)	N/A	N/A	229.93 (427.68)	166.54 (290.36)	0.17
median [IQR]	90.90 [34.30, 241.75]	85.00 [32.40, 195.85]	74.00 [26.00, 230.00]	30.00 [17.00, 112.00]	N/A	N/A	#VALUE!	#VALUE!	#VALUE!
median [iQk]									
Missing; n (%)	324,363 (99.4%)	20,682 (99.5%)	353,960 (99.9%)	29,140 (99.9%)	N/A	N/A	678,323 (99.7%)	49,822 (99.8%)	-0.02
- · · ·							118,272		
		7 740		1 670	NI/A	NI/A			
Lab result number- BUN (mg/dl) mean	102,893	7,740	15,379	1,670	N/A	N/A		9,410	
Lab result number- BUN (mg/dl) meanmean (sd)		7,740 18.03 (7.12)	15,379 586.28 (9,772.52)	1,670 373.82 (7,794.27)	N/A N/A	N/A N/A	92.89 (3523.89)	9,410 81.17 (3283.06)	0.00
mean (sd)	102,893 19.15 (8.38)	18.03 (7.12)	586.28 (9,772.52)	373.82 (7,794.27)	N/A	N/A	92.89 (3523.89)	81.17 (3283.06)	
mean (sd) median [IQR]	102,893 19.15 (8.38) 17.00 [14.00, 22.00]	18.03 (7.12) 16.50 [13.50, 21.00]	586.28 (9,772.52) 17.00 [14.00, 21.00]	373.82 (7,794.27) 17.00 [13.00, 20.00]	N/A N/A	N/A N/A	92.89 (3523.89) #VALUE!	81.17 (3283.06) #VALUE!	#VALUE!
mean (sd)	102,893 19.15 (8.38)	18.03 (7.12)	586.28 (9,772.52)	373.82 (7,794.27)	N/A	N/A	92.89 (3523.89)	81.17 (3283.06)	
mean (sd) median [IQR]	102,893 19.15 (8.38) 17.00 [14.00, 22.00]	18.03 (7.12) 16.50 [13.50, 21.00]	586.28 (9,772.52) 17.00 [14.00, 21.00]	373.82 (7,794.27) 17.00 [13.00, 20.00]	N/A N/A	N/A N/A	92.89 (3523.89) #VALUE!	81.17 (3283.06) #VALUE!	#VALUE!
mean (sd) median [IQR] Missing; n (%)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%)	N/A N/A N/A	N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%)	81.17 (3283.06) #VALUE! 40,528 (81.2%)	#VALUE!
mean (sd) median [IQR]	102,893 19.15 (8.38) 17.00 [14.00, 22.00]	18.03 (7.12) 16.50 [13.50, 21.00]	586.28 (9,772.52) 17.00 [14.00, 21.00]	373.82 (7,794.27) 17.00 [13.00, 20.00]	N/A N/A	N/A N/A	92.89 (3523.89) #VALUE!	81.17 (3283.06) #VALUE!	#VALUE!
mean (sd)median [lQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683	N/A N/A N/A N/A	N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668	81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553	#VALUE!
mean (sd)median [IQR]Missing; n (%) Lab result number- Creatinine (mg/dI) mean (only 0.1 to 15mean (sd)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33)	N/A N/A N/A N/A	N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42)	81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553 1.01 (0.35)	#VALUE! 0.04
mean (sd)median [lQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81, 1.20]	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683	N/A N/A N/A N/A	N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668	81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553	#VALUE! 0.04 0.13 0.05
mean (sd)median [IQR]Missing; n (%) Lab result number- Creatinine (mg/dI) mean (only 0.1 to 15mean (sd)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33)	N/A N/A N/A N/A	N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42)	81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553 1.01 (0.35)	#VALUE! 0.04
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81, 1.20]	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13]	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14]	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10]	N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42)	81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35)	#VALUE! 0.04 0.13 0.05
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81, 1.20] 221,686 (67.9%)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 [0.35] 0.95 [0.80, 1.13] 12,909 (62.1%)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 [0.33) 0.93 [0.80, 1.10] 27,476 (94.2%)	N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%)	#VALUE! 0.04 0.13 0.05
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81, 1.20]	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13]	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14]	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10]	N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42)	81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35)	#VALUE! 0.04 0.13 0.05
mean (sd)median [IQR]Missing; n (%) Lab result number- Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number- HDL level (mg/dl) mean (only =<5000 in	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81, 1.20] 221,686 (67.9%)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%)	N/A N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #WALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%)	81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107	#VALUE! 0.04 0.13 0.05 0.04
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 (0.81, 1.20] 221,686 (67.9%) 84,638 46.33 (13.72)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 [94.3%] 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 [94.2%] 1,481 45.39 (13.98)	N/A N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72)	81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44)	#VALUE! 0.04 0.13 0.05 0.04
mean (sd)median [IQR]Missing; n (%) Lab result number- Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number- HDL level (mg/dl) mean (only =<5000 in	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81, 1.20] 221,686 (67.9%)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%)	N/A N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #WALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%)	81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107	#VALUE! 0.04 0.13 0.05 0.04
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81,1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00,53.50]	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00]	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00]	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50]	N/A N/A N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44)	#VALUE! 0.04 0.13 0.05 0.04 -0.01
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 (0.81, 1.20] 221,686 (67.9%) 84,638 46.33 (13.72)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 [94.3%] 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 [94.2%] 1,481 45.39 (13.98)	N/A N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72)	81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44)	#VALUE! 0.04 0.13 0.05 0.04
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81,1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00,53.50]	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00]	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00]	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%)	N/A N/A N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44)	#VALUE! 0.04 0.13 0.05 0.04 -0.01
mean (sd)median [IQR]Missing; n (%) Lab result number- Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number- HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81, 1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00, 53.50] 241,618 (74.1%)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00]	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%)	N/A N/A N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44)	#VALUE! 0.04 0.13 0.05 0.04 -0.01
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 in	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81,1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00,53.50] 241,618 (74.1%)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436	N/A N/A N/A N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #WALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 inmedian [IQR]Missing; n (%)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81,1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00,53.50] 241,618 (74.1%) 85,353 88.53 (39.92)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99)	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #WALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 inmedian [IQR]Missing; n (%)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81,1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00,53.50] 241,618 (74.1%) 85,353 88.53 (39.92)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99)	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #WALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03
mean (sd)median [IQR]Missing; n (%) Lab result number- Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number- HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number- LDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81, 1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00,53.50] 241,618 (74.1%) 85,353 88.53 (39.92) 85.00 [64.00, 111.50]	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00]	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00]	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38]	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 inmedian [IQR]Missing; n (%)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81,1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00,53.50] 241,618 (74.1%) 85,353 88.53 (39.92)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99)	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #WALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03
mean (sd)median [IQR]Missing; n (%) Lab result number- Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number- HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number- LDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81, 1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00,53.50] 241,618 (74.1%) 85,353 88.53 (39.92) 85.00 [64.00, 111.50]	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00]	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00]	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38]	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81, 1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00,53.50] 241,618 (74.1%) 85,353 88.53 (39.92) 85.00 [64.00, 111.50] 240,903 (73.8%)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 [13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00] 14,181 (68.2%)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00] 336,446 (95.0%)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38] 27,723 (95.1%)	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14) 577,349 (84.8%)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97) 41,904 (83.9%)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 inmedian [IQR]Missing; n (%) Lab result number-Total cholesterol (mg/dl) mean (only =<	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 1.04,570 1.06 (0.42) 0.97 [0.81, 1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00,53.50] 241,618 (74.1%) 85,353 88.53 (39.92) 85.00 [64.00, 111.50] 240,903 (73.8%)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00] 14,181 (68.2%)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00] 336,446 (95.0%)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38] 27,723 (95.1%)	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #WALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14) 577,349 (84.8%)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97) 41,904 (83.9%)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02 0.02
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81, 1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00,53.50] 241,618 (74.1%) 85,353 88.53 (39.92) 85.00 [64.00, 111.50] 240,903 (73.8%)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 [13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00] 14,181 (68.2%)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00] 336,446 (95.0%)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38] 27,723 (95.1%)	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14) 577,349 (84.8%)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97) 41,904 (83.9%)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmedian [IQR]Missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81, 1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00, 53.50] 241,618 (74.1%) 85,353 85,353 85.03 (39.92) 85.00 [64.00, 111.50] 240,903 (73.8%)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00] 14,181 (68.2%) 6,730 172.96 (46.08)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00] 336,446 (95.0%) 18,262 174.81 (49.91)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38] 27,723 (95.1%) 1,515 174.96 (49.83)	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14) 577,349 (84.8%) 104,014 174.46 (47.16)	81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97) 41,904 (83.9%) 8,245 173.33 (46.79)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02 0.02 0.02
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number-Total cholesterol (mg/dl) mean (only = <mean (sd)median="" [iqr]<="" td=""><td>102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 (0.81, 1.20) 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00, 53.50] 241,618 (74.1%) 85,353 88.53 (39.92) 85.00 [64.00, 111.50] 240,903 (73.8%) 85,752 174.39 (46.55) 168.00 [143.00, 199.00]</td><td>18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.10 (10.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00] 14,181 (68.2%) 6,730 172.96 (46.08) 166.00 [143.00, 197.00]</td><td>586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00] 336,446 (95.0%) 18,262 174.81 (49.91) 169.50 [144.00, 201.00]</td><td>373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38] 27,723 (95.1%) 1,515 174.96 (49.83) 169.50 [145.50, 201.00]</td><td>N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A</td><td>N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A</td><td>92.89 (3523.89) #WALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14) 577,349 (84.8%) 104,014 174.46 (47.16) 168.26 (47.16)</td><td>81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97) 41,904 (83.9%) 8,245 173.33 (46.79) 166.64 (46.79)</td><td>#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02 0.02 0.02 0.02 0.03</td></mean>	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 (0.81, 1.20) 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00, 53.50] 241,618 (74.1%) 85,353 88.53 (39.92) 85.00 [64.00, 111.50] 240,903 (73.8%) 85,752 174.39 (46.55) 168.00 [143.00, 199.00]	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.10 (10.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00] 14,181 (68.2%) 6,730 172.96 (46.08) 166.00 [143.00, 197.00]	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00] 336,446 (95.0%) 18,262 174.81 (49.91) 169.50 [144.00, 201.00]	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38] 27,723 (95.1%) 1,515 174.96 (49.83) 169.50 [145.50, 201.00]	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #WALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14) 577,349 (84.8%) 104,014 174.46 (47.16) 168.26 (47.16)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97) 41,904 (83.9%) 8,245 173.33 (46.79) 166.64 (46.79)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02 0.02 0.02 0.02 0.03
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmedian [IQR]Missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%)	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 [0.81, 1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00, 53.50] 241,618 (74.1%) 85,353 85,353 85.03 (39.92) 85.00 [64.00, 111.50] 240,903 (73.8%)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00] 14,181 (68.2%) 6,730 172.96 (46.08)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00] 336,446 (95.0%) 18,262 174.81 (49.91)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38] 27,723 (95.1%) 1,515 174.96 (49.83)	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14) 577,349 (84.8%) 104,014 174.46 (47.16)	81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97) 41,904 (83.9%) 8,245 173.33 (46.79)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02 0.02 0.02
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number-Total cholesterol (mg/dl) mean (only = <mean (sd)median="" [iqr]<="" td=""><td>102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 (0.81, 1.20) 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00, 53.50] 241,618 (74.1%) 85,353 88.53 (39.92) 85.00 [64.00, 111.50] 240,903 (73.8%) 85,752 174.39 (46.55) 168.00 [143.00, 199.00]</td><td>18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.10 (10.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00] 14,181 (68.2%) 6,730 172.96 (46.08) 166.00 [143.00, 197.00]</td><td>586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00] 336,446 (95.0%) 18,262 174.81 (49.91) 169.50 [144.00, 201.00]</td><td>373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38] 27,723 (95.1%) 1,515 174.96 (49.83) 169.50 [145.50, 201.00]</td><td>N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A</td><td>N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A</td><td>92.89 (3523.89) #WALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14) 577,349 (84.8%) 104,014 174.46 (47.16) 168.26 (47.16)</td><td>81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97) 41,904 (83.9%) 8,245 173.33 (46.79) 166.64 (46.79)</td><td>#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02 0.02 0.02 0.02 0.03</td></mean>	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 (0.81, 1.20) 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00, 53.50] 241,618 (74.1%) 85,353 88.53 (39.92) 85.00 [64.00, 111.50] 240,903 (73.8%) 85,752 174.39 (46.55) 168.00 [143.00, 199.00]	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.10 (10.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00] 14,181 (68.2%) 6,730 172.96 (46.08) 166.00 [143.00, 197.00]	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00] 336,446 (95.0%) 18,262 174.81 (49.91) 169.50 [144.00, 201.00]	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38] 27,723 (95.1%) 1,515 174.96 (49.83) 169.50 [145.50, 201.00]	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #WALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14) 577,349 (84.8%) 104,014 174.46 (47.16) 168.26 (47.16)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97) 41,904 (83.9%) 8,245 173.33 (46.79) 166.64 (46.79)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02 0.02 0.02 0.02 0.03
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number- HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number- LDL level (mg/dl) mean (only =<5000 inmedian [IQR]Missing; n (%) Lab result number- Total cholesterol (mg/dl) mean (only = <mean (%)<="" (sd)median="" [iqr]missing;="" n="" td=""><td>102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 1.04,570 1.06 (0.42) 0.97 [0.81, 1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00, 53.50] 241,618 (74.1%) 85,353 88.53 (39.92) 85.00 [64.00, 111.50] 240,903 (73.8%) 85,752 174.39 (46.55) 168.00 [143.00, 199.00] 240,504 (73.7%)</td><td>18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00] 14,181 (68.2%) 6,730 172.96 (46.08) 166.00 [143.00, 197.00] 14,049 (67.6%)</td><td>586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00] 336,446 (95.0%) 18,262 174.81 (49.91) 169.50 [144.00, 201.00] 335,957 (94.8%)</td><td>373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38] 27,723 (95.1%) 1,515 174.96 (49.83) 169.50 [145.50, 201.00] 27,644 (94.8%)</td><td>N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A</td><td>N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A</td><td>92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14) 577,349 (84.8%) 104,014 174.46 (47.16) 168.26 (47.16) 576,461 (84.7%)</td><td>81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97) 41,904 (83.9%) 8,245 173.33 (46.79) 166.64 (46.79) 41,693 (83.5%)</td><td>#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02 0.02 0.02 0.02 0.03</td></mean>	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 1.04,570 1.06 (0.42) 0.97 [0.81, 1.20] 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00, 53.50] 241,618 (74.1%) 85,353 88.53 (39.92) 85.00 [64.00, 111.50] 240,903 (73.8%) 85,752 174.39 (46.55) 168.00 [143.00, 199.00] 240,504 (73.7%)	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.01 (0.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00] 14,181 (68.2%) 6,730 172.96 (46.08) 166.00 [143.00, 197.00] 14,049 (67.6%)	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00] 336,446 (95.0%) 18,262 174.81 (49.91) 169.50 [144.00, 201.00] 335,957 (94.8%)	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38] 27,723 (95.1%) 1,515 174.96 (49.83) 169.50 [145.50, 201.00] 27,644 (94.8%)	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #VALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14) 577,349 (84.8%) 104,014 174.46 (47.16) 168.26 (47.16) 576,461 (84.7%)	81.17 (3283.06) #VALUE! 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97) 41,904 (83.9%) 8,245 173.33 (46.79) 166.64 (46.79) 41,693 (83.5%)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02 0.02 0.02 0.02 0.03
mean (sd)median [IQR]Missing; n (%) Lab result number-Creatinine (mg/dl) mean (only 0.1 to 15mean (sd)median [IQR]Missing; n (%) Lab result number-HDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number-LDL level (mg/dl) mean (only =<5000 inmean (sd)median [IQR]Missing; n (%) Lab result number-Total cholesterol (mg/dl) mean (only = <mean (sd)median="" [iqr]<="" td=""><td>102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 (0.81, 1.20) 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00, 53.50] 241,618 (74.1%) 85,353 88.53 (39.92) 85.00 [64.00, 111.50] 240,903 (73.8%) 85,752 174.39 (46.55) 168.00 [143.00, 199.00]</td><td>18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.10 (10.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00] 14,181 (68.2%) 6,730 172.96 (46.08) 166.00 [143.00, 197.00]</td><td>586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00] 336,446 (95.0%) 18,262 174.81 (49.91) 169.50 [144.00, 201.00]</td><td>373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38] 27,723 (95.1%) 1,515 174.96 (49.83) 169.50 [145.50, 201.00]</td><td>N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A</td><td>N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A</td><td>92.89 (3523.89) #WALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14) 577,349 (84.8%) 104,014 174.46 (47.16) 168.26 (47.16)</td><td>81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97) 41,904 (83.9%) 8,245 173.33 (46.79) 166.64 (46.79)</td><td>#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02 0.02 0.02 0.02 0.03</td></mean>	102,893 19.15 (8.38) 17.00 [14.00, 22.00] 223,363 (68.5%) 104,570 1.06 (0.42) 0.97 (0.81, 1.20) 221,686 (67.9%) 84,638 46.33 (13.72) 44.00 [37.00, 53.50] 241,618 (74.1%) 85,353 88.53 (39.92) 85.00 [64.00, 111.50] 240,903 (73.8%) 85,752 174.39 (46.55) 168.00 [143.00, 199.00]	18.03 (7.12) 16.50 [13.50, 21.00] 13,039 (62.8%) 7,870 1.10 (10.35) 0.95 [0.80, 1.13] 12,909 (62.1%) 6,626 46.38 (13.32) 44.00 [37.00, 53.00] 14,153 (68.1%) 6,598 87.43 (38.51) 84.00 [64.00, 109.00] 14,181 (68.2%) 6,730 172.96 (46.08) 166.00 [143.00, 197.00]	586.28 (9,772.52) 17.00 [14.00, 21.00] 338,840 (95.7%) 15,098 1.03 (0.38) 0.97 [0.81, 1.14] 339,121 (95.7%) 18,017 44.68 (13.73) 43.00 [36.00, 52.00] 336,202 (94.9%) 17,773 88.95 (41.17) 86.00 [65.00, 112.00] 336,446 (95.0%) 18,262 174.81 (49.91) 169.50 [144.00, 201.00]	373.82 (7,794.27) 17.00 [13.00, 20.00] 27,489 (94.3%) 1,683 0.99 (0.33) 0.93 [0.80, 1.10] 27,476 (94.2%) 1,481 45.39 (13.98) 44.00 [37.00, 52.50] 27,678 (94.9%) 1,436 89.25 (40.99) 87.00 [65.00, 112.38] 27,723 (95.1%) 1,515 174.96 (49.83) 169.50 [145.50, 201.00]	N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	92.89 (3523.89) #WALUE! 562,203 (82.6%) 119,668 1.06 (0.42) 0.97 (0.42) 560,807 (82.4%) 102,655 46.04 (13.72) 43.82 (13.72) 577,820 (84.9%) 103,126 88.60 (40.14) 85.17 (40.14) 577,349 (84.8%) 104,014 174.46 (47.16) 168.26 (47.16)	81.17 (3283.06) #VALUEI 40,528 (81.2%) 9,553 1.01 (0.35) 0.95 (0.35) 40,385 (80.9%) 8,107 46.20 (13.44) 44.00 (13.44) 41,831 (83.8%) 8,034 87.76 (38.97) 84.54 (38.97) 41,904 (83.9%) 8,245 173.33 (46.79) 166.64 (46.79)	#VALUE! 0.04 0.13 0.05 0.04 -0.01 -0.01 0.03 0.02 0.02 0.02 0.02 0.02 0.03

mean (sd)	182.88 (149.01)	179.77 (153.27)	191.33 (174.74)	188.19 (193.76)	N/A	N/A	184.35 (153.79)	181.29 (161.36)	0.02
median [IQR]	150.00 [107.00, 214.33]	147.50 [105.00, 210.00]	153.00 [107.00, 222.00]	150.00 [103.00, 221.00]	N/A	N/A	150.52 (153.79)	147.95 (161.36)	0.02
Missing; n (%)	241,256 (73.9%)	14,073 (67.7%)	336,333 (95.0%)	27,677 (94.9%)	N/A	N/A	577,589 (84.9%)	41,750 (83.6%)	0.04
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Lab result number- Hemoglobin mean (only >0 included)	72,386	5,292	9,854	1,027	N/A	N/A	82,240	6,319	
	13.46 (1.73)	13.72 (1.69)	4,136.65 (181,794.60)	522.41 (8,421.85)	N/A	N/A	507.50 (62926.21)	96.40 (3394.38)	0.01
mean (sd)	, ,						, ,	, ,	
median [IQR]	13.50 [12.30, 14.60]	13.80 [12.60, 14.90]	13.80 [12.60, 14.90]	14.00 [12.90, 15.00]	N/A	N/A	#VALUE!	#VALUE!	#VALUE!
Missing; n (%)	253,870 (77.8%)	15,487 (74.5%)	344,365 (97.2%)	28,132 (96.5%)	N/A	N/A	598,235 (87.9%)	43,619 (87.3%)	0.02
Lab result number- Serum sodium mean (only > 90 and < 19	102,168	7,735	14,001	1,597	N/A	N/A	116,169	9,332	
mean (sd)	139.32 (2.84)	139.38 (2.70)	138.77 (2.75)	138.94 (2.61)	N/A	N/A	139.25 (2.83)	139.30 (2.68)	-0.02
median [IQR]	139.50 [138.00, 141.00]	139.50 [138.00, 141.00]	139.00 [137.00, 140.50]	139.00 [137.50, 141.00]	N/A	N/A	139.44 (2.83)	139.41 (2.68)	0.01
Missing; n (%)	224,088 (68.7%)	13,044 (62.8%)	340,218 (96.0%)	27,562 (94.5%)	N/A	N/A	564,306 (82.9%)	40,606 (81.3%)	0.04
5. 6. 7.	,,	.,. (,	, ,	, ,	,	•	, , , , , , , , , , , , , , , , , , , ,	.,,	
Lab result number- Albumin mean (only >0 and <=10 included	94,681	7,310	12,437	1,463	N/A	N/A	107,118	8,773	
mean (sd)	4.23 (0.33)	4.28 (0.32)	4.18 (0.57)	4.24 (0.58)	N/A	N/A	4.22 (0.37)	4.27 (0.38)	-0.13
median [IQR]	4.25 [4.03, 4.45]	4.30 [4.10, 4.50]	4.25 [4.00, 4.50]	4.30 [4.10, 4.50]	N/A	N/A	4.25 (0.37)	4.30 (0.38)	-0.13
Missing; n (%)	231,575 (71.0%)	13,469 (64.8%)	341,782 (96.5%)	27,696 (95.0%)	N/A	N/A	573,357 (84.3%)	41,165 (82.4%)	0.05
Lab result number- Glucose (fasting or random) mean (only	102,043	7,747	13,741	1,522	N/A	N/A	115,784	9,269	
mean (sd)	168.63 (71.80)	163.00 (65.86)	176.14 (76.75)	164.90 (65.90)	N/A	N/A	169.52 (72.41)	163.31 (65.87)	0.09
median [IQR]	151.00 [122.00, 195.00]	146.00 [120.00, 185.00]	156.00 [125.00, 206.83]	148.00 [121.38, 192.00]	N/A	N/A	151.59 (72.41)	146.33 (65.87)	0.08
Missing; n (%)	224,213 (68.7%)	13,032 (62.7%)	340,478 (96.1%)	27,637 (94.8%)	N/A	N/A	564,691 (83.0%)	40,669 (81.4%)	0.04
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Lab result number- Potassium mean (only 1-7 included)	104,247	7,831	15,120	1,636	N/A	N/A	119,367	9,467	
mean (sd)	4.44 (0.44)	4.40 (0.42)	4.37 (0.44)	4.39 (0.41)	N/A	N/A	4.43 (0.44)	4.40 (0.42)	0.07
()	, ,		, ,	, ,		N/A	4.39 (0.44)	, ,	-0.02
median [IQR]	4.40 [4.15, 4.70]	4.40 [4.10, 4.65]	4.35 [4.10, 4.62]	4.40 [4.10, 4.60]	N/A			4.40 (0.42)	
Missing; n (%)	222,009 (68.0%)	12,948 (62.3%)	339,099 (95.7%)	27,523 (94.4%)	N/A	N/A	561,108 (82.5%)	40,471 (81.0%)	0.04
Comorbidity Scores									
CCI (180 days)- ICD9 and ICD10								_	
mean (sd)	2.64 (2.03)	2.24 (1.79)	1.89 (1.77)	1.62 (1.50)	3.05 (2.19)	2.88 (2.07)	2.69 (2.06)	2.33 (1.84)	0.18
median [IQR]	2.00 [1.00, 4.00]	2.00 [1.00, 3.00]	1.00 [1.00, 3.00]	1.00 [1.00, 2.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]	1.77 (2.06)	1.68 (1.84)	0.05
Frailty Score: Qualitative Version 365 days as Categories,									
0; n (%)	144,570 (44.3%)	8,405 (40.4%)	130,992 (37.0%)	10,100 (34.6%)	243,493 (29.2%)	8,951 (21.8%)	519,055 (34.3%)	27,456 (30.1%)	0.09
1 to 2; n (%)	109,279 (33.5%)	7,860 (37.8%)	142,156 (40.1%)	13,184 (45.2%)	280,929 (33.7%)	14,929 (36.3%)	532,364 (35.2%)	35,973 (39.5%)	-0.09
				5,875 (20.1%)					0.00
3 or more; n (%)	72,407 (22.2%)	4,514 (21.7%)	81,071 (22.9%)	5,875 (20.1%)	309,408 (37.1%)	17,264 (42.0%)	462,886 (30.6%)	27,653 (30.4%)	0.00
Frailty Score: Empirical Version 365 days as Categories,									
<0.12908; n (%)	79,447 (24.4%)	6,187 (29.8%)	93,169 (26.3%)	8,684 (29.8%)	94,495 (11.3%)	4,810 (11.7%)	267,111 (17.6%)	19,681 (21.6%)	-0.10
0.12908 - 0.1631167; n (%)	101,582 (31.1%)	6,793 (32.7%)	113,888 (32.2%)	9,961 (34.2%)	194,372 (23.3%)	9,685 (23.5%)	409,842 (27.1%)	26,439 (29.0%)	-0.04
>= 0.1631167; n (%)	145,227 (44.5%)	7,799 (37.5%)	147,162 (41.5%)	10,514 (36.1%)	544,963 (65.4%)	26,649 (64.8%)	837,352 (55.3%)	44,962 (49.4%)	0.12
Non-Frailty; n (%)	182,262 (55.9%)	11,848 (57.0%)	175,584 (49.6%)	15,199 (52.1%)	37,855 (4.5%)	1,488 (3.6%)	395,701 (26.1%)	28,535 (31.3%)	-0.12
Frailty Score (mean): Qualitative Version 365 days,									
mean (sd)	1.52 (2.10)	1.49 (1.90)	1.59 (1.95)	1.46 (1.68)	2.34 (2.51)	2.53 (2.36)	1.99 (2.30)	1.95 (2.06)	0.02
median [IQR]	1.00 [0.00, 2.00]	1.00 [0.00, 2.00]	1.00 [0.00, 2.00]	1.00 [0.00, 2.00]		2.00 [1.00, 4.00]	1.55 (2.30)	1.45 (2.06)	0.05
Frailty Score (mean): Empirical Version 365 days,	1.00 (0.00, 2.00)	1.00 (0.00, 2.00)	1.00 (0.00, 2.00)	1.00 [0.00, 2.00]	2.00 [0.00, 1.00]	2.00 [2.00, 1.00]	1.55 (2.50)	11.13 (2.00)	0.03
	0.15 (0.06)	0.15 (0.05)	0.16 (0.05)	0.15 (0.05)	0.20 (0.07)	0.10 (0.07)	0.10 (0.00)	0.17 (0.06)	0.17
mean (sd)	0.15 (0.06)	0.15 (0.05)	0.16 (0.05)	0.15 (0.05)	0.20 (0.07)	0.19 (0.07)	0.18 (0.06)	0.17 (0.06)	
median [IQR]	0.13 [0.10, 0.17]	0.13 [0.11, 0.17]	0.15 [0.12, 0.18]	0.14 [0.12, 0.17]	0.18 [0.15, 0.23]	0.18 [0.15, 0.23]	0.16 (0.06)	0.16 (0.06)	0.00
Healthcare Utilization									
Any hospitalization; n (%)	35,287 (10.8%)	1,425 (6.9%)	43,063 (12.2%)	2,073 (7.1%)	115,570 (13.9%)	3,921 (9.5%)	193,920 (12.8%)	7,419 (8.1%)	0.15
Any hospitalization within prior 30 days; n (%)	14,867 (4.6%)	352 (1.7%)	16,930 (4.8%)	428 (1.5%)	42,910 (5.1%)	1,044 (2.5%)	74,707 (4.9%)	1,824 (2.0%)	0.16
Any hospitalization during prior 31-180 days; n (%)	22,672 (6.9%)	1,121 (5.4%)	28,419 (8.0%)	1,706 (5.9%)	80,929 (9.7%)	3,095 (7.5%)	132,020 (8.7%)	5,922 (6.5%)	0.08
Endocrinologist Visit; n (%)	18,976 (5.8%)	1,974 (9.5%)	20,447 (5.8%)	2,685 (9.2%)	64,972 (7.8%)	4,910 (11.9%)	104,395 (6.9%)	9,569 (10.5%)	-0.13
Endocrinologist Visit (30 days prior); n (%)	10,972 (3.4%)	1,271 (6.1%)	12,019 (3.4%)	1,888 (6.5%)	36,189 (4.3%)	3,019 (7.3%)	59,180 (3.9%)	6,178 (6.8%)	-0.13
Endocrinologist Visit (31 to 180 days prior); n (%)	13,157 (4.0%)	1,382 (6.7%)	14,187 (4.0%)	1,815 (6.2%)	48,466 (5.8%)	3,711 (9.0%)	75,810 (5.0%)	6,908 (7.6%)	-0.11
Internal medicine/family medicine visits; n (%)	279,476 (85.7%)	16,015 (77.1%)	290,157 (81.9%)	25,344 (86.9%)	698,850 (83.8%)	34,934 (84.9%)	1,268,483 (83.8%)	76,293 (83.8%)	0.00
	2.3,470 (03.770)	10,013 (77.170)	230,137 (01.370)	23,344 (00.370)	050,050 (05.070)	3 .,55 . (04.578)	1,200, 100 (00.070)	. 5,233 (03.070)	0.00
Internal medicine/family medicine visits (30 days prior); n	209,246 (64.1%)	11,953 (57.5%)	213,564 (60.3%)	19,663 (67.4%)	497,741 (59.7%)	25,429 (61.8%)	920,551 (60.8%)	57,045 (62.6%)	-0.04
internal medicine/iaminy medicine visits (30 days prior); n	203,240 (04.1%)	11,953 (57.5%)	213,504 (00.3%)	13,003 (07.4%)	437,741 (59.7%)	23,423 (01.8%)	320,331 (00.8%)	37,045 (02.0%)	-0.04
to be a selected of the select	220 205 (22 550)	42 707 (66 110	220 040 (67 27)	24 572 (74 000)	CO1 CC5 (72 550)	24 272 (76 00)	4 070 700 /74 000	CC C22 /72 2-11	
Internal medicine/family medicine visits (31 to 180 days pr	238,305 (73.0%)	13,787 (66.4%)	238,819 (67.4%)	21,573 (74.0%)	601,665 (72.2%)	31,272 (76.0%)	1,078,789 (71.2%)	66,632 (73.2%)	-0.04
Cardiologist visit; n (%)	88,147 (27.0%)	5,475 (26.3%)	77,765 (22.0%)	6,761 (23.2%)	288,718 (34.6%)	14,709 (35.8%)	454,630 (30.0%)	26,945 (29.6%)	0.01
Number of Cardiologist visits (30 days prior); n (%)	34,095 (10.5%)	1,954 (9.4%)	28,267 (8.0%)	2,434 (8.3%)	106,572 (12.8%)	5,200 (12.6%)	168,934 (11.2%)	9,588 (10.5%)	0.02
Number of Cardiologist visits (31 to 180 days prior); n (%)	71,893 (22.0%)	4,633 (22.3%)	64,786 (18.3%)	5,657 (19.4%)	245,011 (29.4%)	12,880 (31.3%)	381,690 (25.2%)	23,170 (25.4%)	0.00
Electrocardiogram ; n (%)	100,694 (30.9%)	6,409 (30.8%)	106,524 (30.1%)	9,248 (31.7%)	297,892 (35.7%)	15,158 (36.8%)	505,110 (33.4%)	30,815 (33.8%)	-0.01

Use of glucose test strips; n (%)	11,797 (3.6%)	853 (4.1%)	12,023 (3.4%)	1,275 (4.4%)	29,191 (3.5%)	1,529 (3.7%)	53,011 (3.5%)	3,657 (4.0%)	-0.03
Dialysis; n (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	000 (0.0%)	000 (0.0%)	#DIV/0!
Naive new user ; n (%)	100,125 (30.7%)	6,035 (29.0%)	104,280 (29.4%)	7,406 (25.4%)	215,694 (25.9%)	9,800 (23.8%)	420,099 (27.7%)	23,241 (25.5%)	0.05
N antidiabetic drugs at index date									
mean (sd)	1.71 (0.63)	1.84 (0.66)	1.75 (0.65)	1.87 (0.67)	1.69 (0.63)	1.81 (0.66)	1.71 (0.63)	1.84 (0.66)	-0.20
median [IQR]	2.00 [1.00, 2.00]	2.00 [1.00, 2.00]	2.00 [1.00, 2.00]	2.00 [1.00, 2.00]	2.00 [1.00, 2.00]	2.00 [1.00, 2.00]	2.00 (0.63)	2.00 (0.66)	0.00
number of different/distinct medication prescriptions									
mean (sd)	9.04 (4.55)	9.01 (4.67)	8.91 (4.49)	9.01 (4.53)	9.48 (4.52)	10.14 (5.03)	9.25 (4.52)	9.52 (4.79)	-0.06
median [IQR]	8.00 [6.00, 12.00]	8.00 [6.00, 12.00]	8.00 [6.00, 11.00]	8.00 [6.00, 11.00]	9.00 [6.00, 12.00]	9.00 [7.00, 13.00]	8.55 (4.52)	8.45 (4.79)	0.02
Number of Hospitalizations									
mean (sd)	0.13 (0.43)	0.08 (0.33)	0.14 (0.43)	0.08 (0.32)	0.18 (0.52)	0.12 (0.42)	0.16 (0.48)	0.10 (0.37)	0.14
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 (0.48)	0.00 (0.37)	0.00
Number of hospital days								_	
mean (sd)	0.78 (3.52)	0.44 (2.26)	0.87 (3.92)	0.43 (2.33)	1.16 (4.59)	0.72 (3.58)	1.01 (4.23)	0.56 (2.95)	0.12
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 (4.23)	0.00 (2.95)	0.00
Number of Emergency Department (ED) visits									
mean (sd)	0.42 (1.21)	0.28 (0.89)	0.21 (1.40)	0.11 (1.03)	0.61 (1.48)	0.48 (1.27)	0.48 (1.41)	0.32 (1.12)	0.13
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 (1.41)	0.00 (1.12)	0.00
Number of Office visits									
mean (sd)	4.66 (3.91)	4.93 (3.87)	4.65 (4.13)	5.03 (3.99)	5.42 (4.50)	6.30 (4.81)	5.08 (4.29)	5.58 (4.35)	-0.12
median [IQR]	4.00 [2.00, 6.00]	4.00 [2.00, 6.00]	4.00 [2.00, 6.00]	4.00 [2.00, 7.00]	4.00 [2.00, 7.00]	5.00 [3.00, 8.00]	4.00 (4.29)	4.45 (4.35)	-0.10
Number of Endocrinologist visits									2
mean (sd)	0.26 (1.68)	0.49 (2.47)	0.25 (1.62)	0.52 (2.67)	0.43 (2.50)	0.81 (3.84)	0.35 (2.16)	0.64 (3.21)	-0.11
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 (2.16)	0.00 (3.21)	0.00
Number of internal medicine/family medicine visits	0.00(42.07)	7.04 (42.47)	C 52 (0 CC)	7.25 (0.22)	0.47(40.66)	0.47 (44.04)	0.45 (44.04)	0.20 (44.46)	0.04
mean (sd)	9.90 (13.97)	7.91 (12.17)	6.53 (9.66)	7.35 (9.32)	8.17 (10.66)	9.17 (11.81)	8.16 (11.24)	8.30 (11.16)	-0.01 -0.04
median [IQR]	6.00 [2.00, 13.00]	5.00 [1.00, 11.00]	4.00 [1.00, 8.00]	5.00 [2.00, 10.00]	5.00 [2.00, 11.00]	6.00 [2.00, 12.00]	4.98 (11.24)	5.45 (11.16)	-0.04
Number of Cardiologist visitsmean (sd)	1.38 (3.89)	1.35 (3.98)	0.98 (3.06)	1.07 (3.34)	1.85 (4.67)	2.03 (4.87)	1.55 (4.18)	1.57 (4.23)	0.00
median [IQR]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	, ,	0.00 [0.00, 2.00]	0.00 (4.18)	0.00 (4.23)	0.00
Number electrocardiograms received	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 2.00]	0.00 [0.00, 2.00]	0.00 (4.18)	0.00 (4.23)	0.00
mean (sd)	0.63 (1.46)	0.53 (1.15)	0.55 (1.21)	0.53 (1.08)	0.76 (1.46)	0.73 (1.35)	0.68 (1.41)	0.62 (1.22)	0.05
median [IQR]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]		0.00 (1.41)	0.02 (1.22)	0.00
Number of HbA1c tests ordered	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 (1.41)	0.00 (1.22)	0.00
mean (sd)	1.14 (0.89)	1.25 (0.87)	0.84 (0.86)	1.03 (0.90)	1.28 (0.88)	1.42 (0.90)	1.15 (0.88)	1.26 (0.89)	-0.12
median [IQR]	1.00 [1.00, 2.00]	1.00 [1.00, 2.00]	1.00 [0.00, 1.00]	1.00 [0.00, 2.00]		1.00 [1.00, 2.00]	1.00 (0.88)	1.00 (0.89)	0.00
Number of glucose tests ordered			,		,	,	,	,	
mean (sd)	0.48 (2.98)	0.48 (1.61)	0.36 (1.34)	0.41 (1.05)	0.40 (1.06)	0.51 (1.25)	0.41 (1.72)	0.47 (1.28)	-0.04
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]		0.00 [0.00, 1.00]	0.00 (1.72)	0.00 (1.28)	0.00
Number of lipid tests ordered									
mean (sd)	0.91 (0.93)	1.09 (1.00)	0.72 (1.13)	0.97 (1.33)	0.93 (0.82)	1.14 (0.90)	0.88 (0.92)	1.07 (1.08)	-0.19
median [IQR]	1.00 [0.00, 1.00]	1.00 [0.00, 2.00]	0.00 [0.00, 1.00]	1.00 [0.00, 1.00]	1.00 [0.00, 1.00]	1.00 [1.00, 2.00]	0.77 (0.92)	1.00 (1.08)	-0.23
Number of creatinine tests ordered									
mean (sd)	0.07 (0.37)	0.06 (0.33)	0.11 (0.51)	0.06 (0.32)	0.10 (0.44)	0.10 (0.41)	0.10 (0.44)	0.08 (0.37)	0.05
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 (0.44)	0.00 (0.37)	0.00
Number of BUN tests ordered									
mean (sd)	0.04 (0.30)	0.04 (0.27)	0.06 (0.41)	0.04 (0.28)	0.06 (0.35)	0.06 (0.33)	0.06 (0.36)	0.05 (0.30)	0.03
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 (0.36)	0.00 (0.30)	0.00
Number of tests for microalbuminuria									
mean (sd)	0.67 (1.10)	0.72 (1.12)	0.44 (0.89)	0.53 (0.98)	0.41 (0.69)	0.48 (0.75)	0.47 (0.84)	0.55 (0.92)	-0.09
median [IQR]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 0.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 (0.84)	0.00 (0.92)	0.00
Total N distinct ICD9/ICD10 diagnoses at the 3rd digit level									
mean (sd)	4.73 (7.18)	3.43 (5.80)	1.90 (4.73)	1.08 (3.22)	5.66 (8.51)	4.01 (6.97)	4.58 (7.50)	2.94 (5.74)	0.25
median [IQR]	1.00 [0.00, 7.00]	0.00 [0.00, 5.00]	0.00 [0.00, 2.00]	0.00 [0.00, 0.00]	2.00 [0.00, 8.00]	0.00 [0.00, 6.00]	1.32 (7.50)	0.00 (5.74)	0.20
Use of thiazide; n (%)	40,916 (12.5%)	2,098 (10.1%)	42,866 (12.1%)	2,950 (10.1%)	117,483 (14.1%)	4,979 (12.1%)	201,265 (13.3%)	10,027 (11.0%)	0.07
Use of beta blockers; n (%)	126,828 (38.9%)	7,225 (34.8%)	138,568 (39.1%)	10,503 (36.0%)	390,039 (46.8%)	18,959 (46.1%)	655,435 (43.3%)	36,687 (40.3%)	0.06
Use of calcium channel blockers; n (%)	94,025 (28.8%)	5,575 (26.8%)	99,484 (28.1%)	7,927 (27.2%)	273,482 (32.8%)	13,549 (32.9%)	466,991 (30.8%)	27,051 (29.7%)	0.02

Table 1: Saxagliptin vs 2nd Generation Sulfonylureas

				PS-matched					
	Optu	n I	Market	Scan	Medic	are		POOLED	
	Reference-2nd		Reference-2nd		Reference-2nd		Reference-2nd		
Variable	Generation SUs	Exposure-Saxagliptin	Generation SUs	Exposure-Saxagliptin	Generation SUs	Exposure-Saxagliptin	Generation SUs	Exposure-Saxagliptin	St. Diff.
Number of patients	20772	20772	29150	29150	41141	41141	91,063	91,063	
Age									
mean (sd)	65.97 (8.35)	66.00 (8.42)	64.00 (8.47)	64.01 (8.25)	73.91 (6.97)	73.88 (6.93)	68.93 (7.80)	68.92 (7.72)	0.00
median [IQR]	66.00 [60.00, 71.00]	65.00 [60.00, 71.00]	62.00 [59.00, 68.00]	62.00 [59.00, 68.00]	73.00 [68.00, 78.00]	73.00 [68.00, 78.00]	67.88 (7.80)	67.65 (7.72)	0.03
Age categories									
18 - 54; n (%)	1,121 (5.4%)	921 (4.4%)	1,719 (5.9%)	1,526 (5.2%)	0 (0.0%)	0 (0.0%)	2,840 (3.1%)	2,447 (2.7%)	0.02
55 - 64; n (%)	7,765 (37.4%)	8,841 (42.6%)	17,220 (59.1%)	17,419 (59.8%)	868 (2.1%)	757 (1.8%)	25,853 (28.4%)	27,017 (29.7%)	-0.03
65 - 74; n (%)	8,652 (41.7%)	7,471 (36.0%)	6,470 (22.2%)	6,582 (22.6%)	23,506 (57.1%)	23,714 (57.6%)	38,628 (42.4%)	37,767 (41.5%)	0.02
>= 75; n (%)	3,234 (15.6%)	3,539 (17.0%)	3,741 (12.8%)	3,623 (12.4%)	16,767 (40.8%)	16,670 (40.5%)	23,742 (26.1%)	23,832 (26.2%)	0.00
Gender									
Males; n (%)	12,157 (58.5%)	12,147 (58.5%)	17,924 (61.5%)	18,048 (61.9%)	18,432 (44.8%)	18,280 (44.4%)	48,513 (53.3%)	48,475 (53.2%)	0.00
Females; n (%)	8,615 (41.5%)	8,625 (41.5%)	11,226 (38.5%)	11,102 (38.1%)	22,709 (55.2%)	22,861 (55.6%)	42,550 (46.7%)	42,588 (46.8%)	0.00
Race									
White; n (%)	N/A	N/A	N/A	N/A	30,779 (74.8%)	30,782 (74.8%)	30,779 (74.8%)	30,782 (74.8%)	0.00
Black; n (%)	N/A	N/A	N/A	N/A	4,533 (11.0%)	4,513 (11.0%)	4,533 (11.0%)	4,513 (11.0%)	0.00
Asian; n (%)	N/A	N/A	N/A	N/A	1,883 (4.6%)	1,951 (4.7%)	1,883 (4.6%)	1,951 (4.7%)	0.00
Hispanic; n (%)	N/A	N/A	N/A	N/A	1,960 (4.8%)	1,895 (4.6%)	1,960 (4.8%)	1,895 (4.6%)	0.01
North American Native; n (%)	N/A	N/A	N/A	N/A	575 (1.4%)	540 (1.3%)	575 (1.4%)	540 (1.3%)	0.01
Other/Unknown; n (%)	N/A	N/A	N/A	N/A	1,411 (3.4%)	1,460 (3.5%)	1,411 (3.4%)	1,460 (3.5%)	-0.01
Region (lumping missing&other category with West)									
Northeast; n (%)	2,316 (11.1%)	2,359 (11.4%)	6,104 (20.9%)	5,957 (20.4%)	8,132 (19.8%)	8,083 (19.6%)	16,552 (18.2%)	16,399 (18.0%)	0.01
South; n (%)	11,440 (55.1%)	11,446 (55.1%)	5,868 (20.1%)	6,007 (20.6%)	19,036 (46.3%)	18,936 (46.0%)	36,344 (39.9%)	36,389 (40.0%)	0.00
Midwest; n (%)	3,778 (18.2%)	3,701 (17.8%)	14,089 (48.3%)	14,091 (48.3%)	7,077 (17.2%)	7,132 (17.3%)	24,944 (27.4%)	24,924 (27.4%)	0.00
West; n (%)	3,238 (15.6%)	3,266 (15.7%)	2,716 (9.3%)	2,738 (9.4%)	6,896 (16.8%)	6,990 (17.0%)	12,850 (14.1%)	12,994 (14.3%)	-0.01
Unknown+missing; n (%)	N/A	N/A	373 (1.3%)	357 (1.2%)	N/A	N/A	373 (1.3%)	357 (1.2%)	0.01
CV Covariates									
Ischemic heart disease; n (%)	4,667 (22.5%)	4,615 (22.2%)	6,088 (20.9%)	6,045 (20.7%)	12,003 (29.2%)	11,984 (29.1%)	22,758 (25.0%)	22,644 (24.9%)	0.00
Acute MI; n (%)	233 (1.1%)	244 (1.2%)	282 (1.0%)	300 (1.0%)	483 (1.2%)	471 (1.1%)	998 (1.1%)	1,015 (1.1%)	0.00
ACS/unstable angina; n (%)	320 (1.5%)	311 (1.5%)	384 (1.3%)	374 (1.3%)	626 (1.5%)	589 (1.4%)	1,330 (1.5%)	1,274 (1.4%)	0.01
Old MI; n (%)	514 (2.5%)	524 (2.5%)	443 (1.5%)	415 (1.4%)	1,241 (3.0%)	1,318 (3.2%)	2,198 (2.4%)	2,257 (2.5%)	-0.01
Stable angina; n (%)	691 (3.3%)	662 (3.2%)	739 (2.5%)	729 (2.5%)	1,473 (3.6%)	1,494 (3.6%)	2,903 (3.2%)	2,885 (3.2%)	0.00
Coronary atherosclerosis and other forms of chronic									
ischemic heart disease; n (%)	4,278 (20.6%)	4,251 (20.5%)	5,578 (19.1%)	5,543 (19.0%)	11,376 (27.7%)	11,360 (27.6%)	21,232 (23.3%)	21,154 (23.2%)	0.00
Other atherosclerosis with ICD10; n (%)	222 (1.1%)	253 (1.2%)	319 (1.1%)	366 (1.3%)	835 (2.0%)	937 (2.3%)	1,376 (1.5%)	1,556 (1.7%)	-0.02
Previous cardiac procedure (CABG or PTCA or Stent);									
n (%)	157 (0.8%)	166 (0.8%)	201 (0.7%)	199 (0.7%)	244 (0.6%)	233 (0.6%)	602 (0.7%)	598 (0.7%)	0.00
History of CABG or PTCA; n (%)	942 (4.5%)	932 (4.5%)	665 (2.3%)	693 (2.4%)	2,928 (7.1%)	2,852 (6.9%)	4,535 (5.0%)	4,477 (4.9%)	0.00
Any stroke; n (%)	1,315 (6.3%)	1,284 (6.2%)	1,559 (5.3%)	1,582 (5.4%)	3,796 (9.2%)	3,882 (9.4%)	6,670 (7.3%)	6,748 (7.4%)	0.00
Ischemic stroke (w and w/o mention of cerebral									
infarction); n (%)	1,300 (6.3%)	1,269 (6.1%)	1,551 (5.3%)	1,568 (5.4%)	3,760 (9.1%)	3,839 (9.3%)	6,611 (7.3%)	6,676 (7.3%)	0.00
Hemorrhagic stroke; n (%)	31 (0.1%)	30 (0.1%)	22 (0.1%)	33 (0.1%)	65 (0.2%)	90 (0.2%)	118 (0.1%)	153 (0.2%)	-0.03
TIA; n (%)	312 (1.5%)	289 (1.4%)	346 (1.2%)	335 (1.1%)	872 (2.1%)	873 (2.1%)	1,530 (1.7%)	1,497 (1.6%)	0.01
Other cerebrovascular disease; n (%)	300 (1.4%)	298 (1.4%)	299 (1.0%)	289 (1.0%)	994 (2.4%)	984 (2.4%)	1,593 (1.7%)	1,571 (1.7%)	0.00
Late effects of cerebrovascular disease; n (%)	305 (1.5%)	291 (1.4%)	225 (0.8%)	220 (0.8%)	837 (2.0%)	826 (2.0%)	1,367 (1.5%)	1,337 (1.5%)	0.00
Cerebrovascular procedure; n (%)	18 (0.1%)	15 (0.1%)	28 (0.1%)	29 (0.1%)	40 (0.1%)	26 (0.1%)	086 (0.1%)	070 (0.1%)	0.00
Heart failure (CHF); n (%)	1,274 (6.1%)	1,229 (5.9%)	1,275 (4.4%)	1,274 (4.4%)	4,225 (10.3%)	4,239 (10.3%)	6,774 (7.4%)	6,742 (7.4%)	0.00
Peripheral Vascular Disease (PVD) or PVD Surgery; n									
(%)	1,525 (7.3%)	1,479 (7.1%)	1,776 (6.1%)	1,702 (5.8%)	4,754 (11.6%)	4,859 (11.8%)	8,055 (8.8%)	8,040 (8.8%)	0.00
Atrial fibrillation; n (%)	1,271 (6.1%)	1,217 (5.9%)	1,377 (4.7%)	1,393 (4.8%)	4,481 (10.9%)	4,452 (10.8%)	7,129 (7.8%)	7,062 (7.8%)	0.00
Other cardiac dysrhythmia; n (%)	1,384 (6.7%)	1,327 (6.4%)	1,407 (4.8%)	1,413 (4.8%)	4,462 (10.8%)	4,442 (10.8%)	7,253 (8.0%)	7,182 (7.9%)	0.00
Cardiac conduction disorders; n (%)	415 (2.0%)	406 (2.0%)	431 (1.5%)	396 (1.4%)	1,446 (3.5%)	1,404 (3.4%)	2,292 (2.5%)	2,206 (2.4%)	0.01
Other CVD; n (%)	2,080 (10.0%)	1,991 (9.6%)	2,434 (8.3%)	2,357 (8.1%)	6,289 (15.3%)	6,323 (15.4%)	10,803 (11.9%)	10,671 (11.7%)	0.01
Diabetes-related complications									
Diabetic retinopathy; n (%)	1,011 (4.9%)	1,005 (4.8%)	1,031 (3.5%)	1,018 (3.5%)	2,947 (7.2%)	2,806 (6.8%)	4,989 (5.5%)	4,829 (5.3%)	0.01
Diabetes with other ophthalmic manifestations; n									
(%)	82 (0.4%)	75 (0.4%)	921 (3.2%)	927 (3.2%)	1,297 (3.2%)	1,319 (3.2%)	2,300 (2.5%)	2,321 (2.5%)	0.00
Retinal detachment, vitreous hemorrhage,									
vitrectomy; n (%)	66 (0.3%)	81 (0.4%)	63 (0.2%)	86 (0.3%)	159 (0.4%)	146 (0.4%)	288 (0.3%)	313 (0.3%)	0.00
Retinal laser coagulation therapy; n (%)	112 (0.5%)	105 (0.5%)	154 (0.5%)	164 (0.6%)	261 (0.6%)	275 (0.7%)	527 (0.6%)	544 (0.6%)	0.00
Occurrence of Diabetic Neuropathy ; n (%)	2,892 (13.9%)	2,857 (13.8%)	2,320 (8.0%)	2,352 (8.1%)	7,189 (17.5%)	7,056 (17.2%)	12,401 (13.6%)	12,265 (13.5%)	0.00
Occurrence of diabetic nephropathy with ICD10; n									
(%)	1,950 (9.4%)	1,930 (9.3%)	1,006 (3.5%)	1,037 (3.6%)	3,194 (7.8%)	3,131 (7.6%)	6,150 (6.8%)	6,098 (6.7%)	0.00

Page										
Content Cont		, ,	, ,	, ,		,				
Control Cont		913 (4.4%)	914 (4.4%)	950 (3.3%)	933 (3.2%)	1,892 (4.6%)	1,907 (4.6%)	3,755 (4.1%)	3,754 (4.1%)	0.00
December										
Page										
Security Control Con		88 (0.4%)	80 (0.4%)	128 (0.4%)	97 (0.3%)	1/8 (0.4%)	185 (0.4%)	394 (0.4%)	362 (0.4%)	0.00
The component property and conclusion production prod		0.4 (0.40()	00 (0.5%)	05 (0.20()	00 (0.20()	400 (0.50()	400 (0.50()	250 (2.40()	276 (2.49()	2.22
Cardin C		84 (0.4%)	98 (0.5%)	85 (0.3%)	88 (0.3%)	199 (0.5%)	190 (0.5%)	368 (0.4%)	376 (0.4%)	0.00
Bether Core N 930 10,00 12		1.044 (5.00/)	1 120 (5 40/)	0.05 (2.00/)	026 (2.00/)	2.044/7.20/\	2.005 (7.20/)	4.053 (5.30/)	4.044 (5.49/)	0.00
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Designation of complements 1,000										
Page		806 (3.9%)	811 (3.9%)	803 (2.8%)	799 (2.7%)	1,639 (4.0%)	1,019 (3.9%)	3,248 (3.6%)	3,229 (3.5%)	0.01
Hypertopenins Hypertopenin		10 200 (02 49/)	10 171 (02 20/)	20 205 (06 00/)	20.155 (05.5%)	20 (20 (00 20/)	20 502 (06 20/)	07.042.(05.00/)	0.5 0.10 (0.5 40/)	0.01
Section Company Comp		19,200 (92.4%)	19,171 (92.3%)	28,205 (96.8%)	28,100 (90.0%)	39,038 (90.3%)	39,582 (96.2%)	87,043 (95.6%)	86,919 (95.4%)	0.01
Popular (19) 16.560 (19.89) 16.560		17 011 (91 0%)	16 076 (91 7%)	10 591 (67 2%)	10 540 (67 0%)	26 792 (90 4%)	26 702 (90 4%)	72 275 (90 6%)	72 209 (90 5%)	0.00
Emma N										
Read Explanation (conclusions) 1,72 (2.5) 3,351 (6.15) 2,70 (2.35) 4,77 (1.65) 4,51 (1.56) 4,51 (1.56) 4,52 (1.57) 4,52 (1.5										
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Cocumence of minical intensic and intendiciency; no (s)										
Column or cataracts; n(s) 3,957 (15.0%) 3,868 (18.6%) 4,501 (15.0%) 4,41 (15.3%) 13.06 (17.0%) 3,205 (15.0%) 5,240 (18.0%) 2,010 (15.0%) 0.00 (10.0%) 184 (10.0%)		1,054 (5.1%)	1,007 (4.8%)	637 (2.2%)	634 (2.2%)	2,624 (6.4%)	2,658 (6.5%)	4,315 (4.7%)	4,299 (4.7%)	0.00
Calculation of Description 1,977 (19/98) 1,986 (16,98) 1,987 (19/98) 1,986 (16,549) 1,986 (16,54										
Cedulitor abscess froze, n(%) 124 (0.9%) 124 (0.9%) 128 (0.9%) 128 (0.9%) 128 (0.9%) 138 (0.9%) 32 (0.1%) 32 (0.1%) 32 (0.1%) 32 (0.1%) 32 (0.1%) 32 (0.1%) 32 (0.1%) 32 (0.1%) 33 (0.2%) 33 (0.1%) 33 (0.2%) 33 (0.2%) 33 (0.2%) 32 (0.1%) 33 (0.2%) 32 (0.1%) 33 (0.2%) 32 (0.1%) 33 (0.2%) 32	· ,				, ,					
Both Leter, 1 (No) 32 (1.6%) 320 (1.5%										
Badder stones; n(h) 37 (0.2%) 33 (0.2%) 32 (0.1%) 33 (0.1%) 33 (0.1%) 33 (0.1%) 37 (0.2%) 1,198 (1.9%) 2,458 (2.1%) 2,327 (2.6%) 0.01 (1.0%) 0.05 (1.0%) 0.										
Internation (Information (In	* * *	, ,	, ,	, ,	, ,					
Unitary tract infections (URIS)- (PM) 1,686 (B.1%) 1,703 (B.2%) 1,799 (B.1%) 1,799 (B.1%) 1,788 (B.5%) 1,981 (B.0%) 3,845 (B.0%) 36,735 (B.0%) 3,043 (B.3%) 9,562 (B.2.%) 9,319 (B.0%) 1,788										
	Kidney stones; n (%)	557 (2.7%)	502 (2.4%)	689 (2.4%)	627 (2.2%)	1,207 (2.9%)	1,198 (2.9%)	2,453 (2.7%)	2,327 (2.6%)	
Non-displick urinallysis: n (h) S.24 (196 (h)) S.38 (106 (13h)) S.37 (15h) S.38 (106 (13h)) S.38 (106 (13h)) S.31 (15h)	Urinary tract infections (UTIs); n (%)	1,686 (8.1%)	1,703 (8.2%)	1,779 (6.1%)	1,725 (5.9%)	6,277 (15.3%)	6,276 (15.3%)	9,742 (10.7%)	9,704 (10.7%)	
Unime Author (15th (15) 541 (26) 522 (25) 797 (27) 798 (27) 798 (27) 1782 (43) 1710 (42) 3.120 (24) 3.030 (3.34) 0.01 (5761 (58) 3.50 (17) 3.50 (17) 3.51 (17) 3.51 (17) 3.51 (18	Dipstick urinalysis; n (%)	7,535 (36.3%)	7,904 (38.1%)	9,562 (32.8%)	9,919 (34.0%)	17,882 (43.5%)	18,912 (46.0%)	34,979 (38.4%)	36,735 (40.3%)	-0.04
Cyclogy, n (%) 227 (1.1%) 221 (1.1%) 393 (1.3%) 393 (1.3%) 393 (1.3%) 740 (1.8%) 757 (1.8%) 1.360 (1.5%) 1.371 (1.5%) 0.00 (2.7%) 0	Non-dipstick urinalysis; n (%)	8,224 (39.6%)	8,380 (40.3%)	9,173 (31.5%)	9,298 (31.9%)	16,448 (40.0%)	16,601 (40.4%)	33,845 (37.2%)	34,279 (37.6%)	-0.01
Cycles (N) So (1,7%) So (1,7%) So (1,7%) So (1,8%) So	Urine function test; n (%)	541 (2.6%)	522 (2.5%)	797 (2.7%)	798 (2.7%)	1,782 (4.3%)	1,710 (4.2%)	3,120 (3.4%)	3,030 (3.3%)	0.01
Chec Covariates	Cytology; n (%)	227 (1.1%)	221 (1.1%)	393 (1.3%)	393 (1.3%)	740 (1.8%)	757 (1.8%)	1,360 (1.5%)	1,371 (1.5%)	0.00
Liver (Issaeze, It N) 1,041 (5.0%) 1,007 (4.8%) 964 (3.3%) 954 (3.3%) 951 (3.3%) 2,109 (5.1%) 2,105 (5.2%) 4,114 (4.5%) 15,799 (17.1%) 0.00 Cotecarthritis, arthropathies and musculoskeletal 1,579 (17.1%) 1,	Cystos; n (%)	350 (1.7%)	351 (1.7%)	516 (1.8%)	535 (1.8%)	969 (2.4%)	979 (2.4%)	1,835 (2.0%)	1,865 (2.0%)	0.00
Octoor pathwists, n (%) Cy94 (14.3%) Cy93 (14.1%) Cy93 (14	Other Covariates									
Other arthritis, arthropathies and musculoskeletal pain; n (%) 6.815 (3.2.8%) 6.756 (32.5%) 8.36 (28.8%) 8.254 (28.3%) 18,345 (44.6%) 18,289 (44.5%) 33,346 (36.8%) 33,299 (36.6%) 0.00 pain; n (%) 4,125 (19.9%) 4,111 (19.8%) 5,015 (17.2%) 4,993 (17.1%) 11,187 (27.2%) 11,235 (27.3%) 20,327 (22.3%) 20,339 (22.3%) 0.00 Fractures; n (%) 473 (2.3%) 464 (2.2%) 650 (2.5%) 623 (2.1%) 1,539 (3.7%) 1,478 (3.6%) 2,642 (2.9%) 2,565 (2.8%) 0.01 Falls; n (%) 400 (19.9%) 421 (2.0%) 175 (0.6%) 1,798 (3.3%) 1,361 (3.3%) 1,953 (2.1%) 1,953 (2.1%) 1,953 (2.1%) 0.00 Veyperthyroidism; n (%) 1,213 (8.8%) 1,166 (6.6%) 1,066 (3.7%) 1,150 (8.8%) 4,387 (10.7%) 4,452 (10.8%) 6,667 (7.3%) 6,723 (7.4%) 0.00 Hyperthyroidism; n (%) 3,175 (15.3%) 3,19 (15.0%) 3,017 (10.3%) 2,931 (10.1%) 8,200 (2.2%) 8,090 (19.7%) 14,140 (15.5%) 0.01 Other disorders of thyroidigland; n (%) 691 (3.3%) 730 (3.5	Liver disease; n (%)	1,041 (5.0%)	1,007 (4.8%)	964 (3.3%)	951 (3.3%)	2,109 (5.1%)	2,120 (5.2%)	4,114 (4.5%)	4,078 (4.5%)	0.00
Paint, 19()	Osteoarthritis; n (%)	2,964 (14.3%)	2,939 (14.1%)	3,120 (10.7%)	3,066 (10.5%)	9,491 (23.1%)	9,594 (23.3%)	15,575 (17.1%)	15,599 (17.1%)	0.00
Dorsopathies; n (%)	Other arthritis, arthropathies and musculoskeletal									
Fractures; n (%) 473 (2.3%) 464 (2.2%) 630 (2.2%) 623 (2.1%) 1,539 (3.7%) 1,478 (3.6%) 2,642 (2.9%) 2,565 (2.8%) 0.01 Falls; n (%) 400 (1.9%) 421 (2.0%) 175 (0.6%) 172 (0.6%) 1,378 (3.3%) 1,351 (3.3%) 1,953 (2.1%) 1,954 (2.1%) 0.00 Oxeoporosis; n (%) 1,213 (6.8%) 1,166 (5.6%) 1,066 (3.7%) 1,105 (3.8%) 4,387 (10.7%) 4,452 (10.8%) 6,666 (7.3%) 6,723 (7.4%) 0.00 Oxeoporosis; n (%) 141 (0.7%) 142 (0.7%) 154 (0.5%) 145 (0.5%) 487 (1.0%) 456 (1.1%) 79 (0.9%) 743 (0.8%) 0.01 Oxeoporosis; n (%) 141 (0.7%) 142 (0.7%) 154 (0.5%) 145 (0.5%) 484 (1.2%) 456 (1.1%) 79 (0.9%) 743 (0.8%) 0.01 Oxeoporosis; n (%) 141 (0.7%) 142 (0.7%) 154 (0.5%) 145 (0.5%) 14	pain; n (%)	6,815 (32.8%)	6,756 (32.5%)	8,386 (28.8%)	8,254 (28.3%)	18,345 (44.6%)	18,289 (44.5%)	33,546 (36.8%)	33,299 (36.6%)	0.00
Falls; n (%) 400 (1.9%) 421 (2.0%) 175 (0.6%) 172 (0.6%) 1,378 (3.3%) 1,361 (3.3%) 1,953 (2.1%) 1,954 (2.1%) 0.00 Oxteoporosis; n (%) 1,213 (5.8%) 1,166 (6.5%) 1,166 (3.7%) 1,105 (3.8%) 4,387 (1.0.7%) 4,452 (10.8%) 6,666 (7.3%) 6,723 (7.4%) 0.00 Oxteoporosis; n (%) 141 (0.7%) 144 (0.7%) 142 (0.7%) 154 (0.5%) 145 (0.5%) 448 (1.2%) 456 (1.1%) 779 (0.9%) 743 (0.8%) 0.01 Hypothyroidism; n (%) 3,175 (15.3%) 3,119 (15.0%) 3,017 (10.3%) 2,931 (10.1%) 8,320 (20.2%) 8,090 (19.7%) 14,512 (15.9%) 14,140 (15.5%) 0.01 Other disorders of thyroid gland; n (%) 691 (3.3%) 730 (3.5%) 868 (3.0%) 889 (3.0%) 2,014 (4.9%) 2,248 (5.5%) 3,573 (3.9%) 3,667 (4.2%) 0.02 Depression; n (%) 1,417 (6.8%) 1,529 (5.2%) 1,524 (5.2%) 1,455 (5.0%) 4,115 (10.0%) 4,149 (10.1%) 7,056 (7.7%) 6,997 (7.7%) 0.00 Anxiety; n (%) 1,150 (5.5%) 1,110 (3.3%) 1,101 (3.3%) 1,033 (3.5%) 976 (3.3%) 3,117 (7.6%) 3,190 (7.8%) 5,300 (5.8%) 5,276 (5.8%) 0.00 Dementia; n (%) 1,846 (8.9%) 1,817 (8.7%) 2,953 (10.1%) 2,953 (10.1%) 3,774 (9.2%) 3,794 (9.2%) 8,573 (9.4%) 8,559 (4.9%) 0.00 Dementia; n (%) 1,101 (1.0%)	Dorsopathies; n (%)	4,125 (19.9%)	4,111 (19.8%)	5,015 (17.2%)	4,993 (17.1%)	11,187 (27.2%)	11,235 (27.3%)	20,327 (22.3%)	20,339 (22.3%)	0.00
Osteoporosis; n (%) 1,213 (5.8%) 1,166 (5.6%) 1,06 (3.7%) 1,105 (3.8%) 4,387 (10.7%) 4,452 (10.8%) 6,666 (7.3%) 6,723 (7.4%) 0.00 Hyperthyroidism; n (%) 141 (0.7%) 142 (0.7%) 154 (0.5%) 145 (0.5%) 484 (1.2%) 456 (1.1%) 779 (0.9%) 743 (0.8%) 0.01 Hypothyroidism; n (%) 31,75 (15.3%) 3,119 (15.0%) 3,017 (10.3%) 2,931 (10.1%) 8,320 (20.2%) 8,090 (19.7%) 14,512 (15.9%) 14,140 (15.5%) 0.01 Other disorders of thyroid gland; n (%) 691 (3.3%) 730 (3.5%) 868 (3.0%) 889 (3.0%) 2,014 (4.9%) 2,248 (5.5%) 3,573 (3.9%) 3,674 (2.2%) 0.02 Depression; n (%) 1,417 (6.8%) 1,395 (6.7%) 1,524 (5.2%) 1,455 (5.0%) 4,115 (10.0%) 4,149 (10.1%) 7,056 (7.7%) 6,999 (7.7%) 0.00 Anxiety; n (%) 1,150 (5.5%) 1,110 (5.3%) 1,033 (3.5%) 976 (3.3%) 3,117 (7.6%) 3,190 (7.8%) 5,300 (5.8%) 5,276 (5.8%) 0.00 Demetiti; n (%) 1,846 (8.9%) 1,181 (8.7%) 2,953 (10.1%) <td>Fractures; n (%)</td> <td>473 (2.3%)</td> <td>464 (2.2%)</td> <td>630 (2.2%)</td> <td>623 (2.1%)</td> <td>1,539 (3.7%)</td> <td>1,478 (3.6%)</td> <td>2,642 (2.9%)</td> <td>2,565 (2.8%)</td> <td>0.01</td>	Fractures; n (%)	473 (2.3%)	464 (2.2%)	630 (2.2%)	623 (2.1%)	1,539 (3.7%)	1,478 (3.6%)	2,642 (2.9%)	2,565 (2.8%)	0.01
Osteoporosis; n (%)	Falls; n (%)	400 (1.9%)	421 (2.0%)	175 (0.6%)	172 (0.6%)	1,378 (3.3%)	1,361 (3.3%)	1,953 (2.1%)	1,954 (2.1%)	0.00
Hypothyriodism; n (%) 3,175 (15.3%) 3,119 (15.0%) 3,017 (10.3%) 2,931 (10.1%) 8,320 (20.2%) 8,090 (19.7%) 14,512 (15.9%) 14,140 (15.5%) 0.01 Other disorders of thyroid gland; n (%) 691 (3.3%) 730 (3.5%) 868 (3.0%) 889 (3.0%) 2,014 (4.9%) 2,248 (5.5%) 3,573 (3.9%) 3,867 (4.2%) 0.02 Other disorders of thyroid gland; n (%) 1,417 (6.8%) 1,395 (6.7%) 1,524 (5.2%) 1,455 (5.0%) 4,115 (10.0%) 4,149 (10.1%) 7,056 (7.7%) 6,999 (7.7%) 0.00 Anxiety; n (%) 1,150 (5.5%) 1,110 (5.3%) 1,033 (3.5%) 976 (3.3%) 3,117 (7.6%) 3,190 (7.8%) 5,300 (5.8%) 5,276 (5.8%) 0.00 Sleep_Disorder; n (%) 1,846 (8.9%) 1,817 (8.7%) 2,953 (10.1%) 2,943 (10.1%) 3,774 (9.2%) 3,794 (9.2%) 8,573 (9.4%) 8,554 (9.4%) 0.00 Dementia; n (%) 520 (2.5%) 513 (2.5%) 436 (1.5%) 417 (1.4%) 2,620 (6.4%) 2,659 (6.5%) 3,576 (3.9%) 3,589 (3.9%) 0.00 Peirium; n (%) 139 (0.7%) 127 (0.6%) 150 (0.5%) 136 (0.5%) 569 (1.4%) 577 (1.4%) 888 (0.9%) 840 (0.9%) 0.00 Psychosis; n (%) 116 (0.6%) 125 (0.6%) 149 (0.5%) 139 (0.5%) 704 (1.7%) 696 (1.7%) 969 (1.1%) 960 (1.1%) 0.00 Overweight; n (%) 2,583 (12.4%) 2,589 (12.5%) 1,765 (6.1%) 1,801 (6.2%) 4,727 (10.3%) 4,255 (10.3%) 8,620 (9.5%) 8,645 (9.5%) 0.00 Smoking; n (%) 1,718 (8.3%) 1,667 (8.0%) 1,199 (4.1%) 1,207 (4.1%) 4,251 (10.3%) 4,199 (10.2%) 7,168 (7.9%) 7,073 (7.8%) 0.00 Overweight; n (%) 150 (0.8%) 150 (0.8%) 150 (0.5%) 157 (0.5%) 134 (0.5%) 244 (0.6%) 249 (0.6%) 556 (0.6%) 556 (0.6%) 550 (0.6%) 0.00 Overweight; n (%) 150 (0.8%) 150 (0.5%) 152 (0.7%) 152 (0.7%) 152 (0.7%) 152 (0.5%) 152 (0.7%) 152 (0.7%) 152 (0.7%) 152 (0.5%) 152 (0.7%)	Osteoporosis; n (%)	1,213 (5.8%)	1,166 (5.6%)	1,066 (3.7%)	1,105 (3.8%)	4,387 (10.7%)	4,452 (10.8%)	6,666 (7.3%)	6,723 (7.4%)	0.00
Hypothyroidism; n (%) 3,175 (15.3%) 3,119 (15.0%) 3,017 (10.3%) 2,931 (10.1%) 8,320 (20.2%) 8,090 (19.7%) 14,512 (15.9%) 14,140 (15.5%) 0.01 Other disorders of thyroid gland; n (%) 691 (3.3%) 730 (3.5%) 868 (3.0%) 889 (3.0%) 2,014 (4.9%) 2,248 (5.5%) 3,573 (3.9%) 3,867 (4.2%) 0.00 Expression; n (%) 1,417 (6.8%) 1,395 (6.7%) 1,395 (6.7%) 1,524 (5.2%) 1,455 (5.0%) 4,115 (10.0%) 4,149 (10.1%) 7,056 (7.7%) 6,999 (7.7%) 0.00 Anxiety; n (%) 1,150 (5.5%) 1,110 (5.3%) 1,033 (3.5%) 976 (3.3%) 3,117 (7.6%) 3,190 (7.8%) 5,300 (5.8%) 5,276 (5.8%) 0.00 Expression; n (%) 1,846 (8.9%) 1,817 (8.7%) 2,953 (10.1%) 2,943 (10.1%) 3,774 (9.2%) 3,794 (9.2%) 8,573 (9.4%) 8,554 (9.4%) 0.00 Expension; n (%) 520 (5.5%) 513 (2.5%) 436 (1.5%) 417 (1.4%) 2,620 (6.4%) 2,659 (6.5%) 3,576 (3.9%) 3,589 (3.9%) 0.00 Expension; n (%) 139 (0.7%) 127 (0.6%) 150 (0.5%) 136	Hyperthyroidism; n (%)	141 (0.7%)	142 (0.7%)	154 (0.5%)	145 (0.5%)	484 (1.2%)	456 (1.1%)	779 (0.9%)	743 (0.8%)	0.01
Other disorders of thyroid gland; n (%) 691 (3.3%) 730 (3.5%) 868 (3.0%) 889 (3.0%) 2,014 (4.9%) 2,248 (5.5%) 3,573 (3.9%) 3,867 (4.2%) -0.02 Depression; n (%) 1,417 (6.8%) 1,395 (6.7%) 1,524 (5.2%) 1,455 (5.0%) 4,115 (10.0%) 4,149 (10.1%) 7,056 (7.7%) 6,999 (7.7%) 0.00 Anxiety; n (%) 1,150 (5.5%) 1,110 (5.3%) 1,033 (3.5%) 976 (3.3%) 3,117 (7.6%) 3,190 (7.8%) 5,20 (5.8%) 5,276 (5.8%) 0.00 Sleep_Disorder; n (%) 1,846 (8.9%) 1,817 (8.7%) 2,953 (10.1%) 2,943 (10.1%) 3,774 (9.2%) 3,794 (9.2%) 8,573 (9.4%) 8,554 (9.4%) 0.00 Dementia; n (%) 520 (2.5%) 1513 (2.5%) 436 (1.5%) 417 (1.4%) 2,620 (6.4%) 2,659 (6.5%) 3,576 (3.9%) 3,589 (3.9%) 0.00 Psychosis; n (%) 139 (0.7%) 127 (0.6%) 150 (0.5%) 139 (0.5%) 704 (1.7%) 696 (1.7%) 969 (1.1%) 960 (1.1%) 960 (1.1%) 0.00 Obesity; n (%) 2,583 (12.4%) 2,589 (12.5%) 1,765 (6.1%) </td <td></td> <td></td> <td></td> <td></td> <td>2,931 (10.1%)</td> <td></td> <td></td> <td>14,512 (15.9%)</td> <td></td> <td>0.01</td>					2,931 (10.1%)			14,512 (15.9%)		0.01
Depression; n (%) 1,417 (6.8%) 1,395 (6.7%) 1,524 (5.2%) 1,455 (5.0%) 4,115 (10.0%) 4,149 (10.1%) 7,056 (7.7%) 6,999 (7.7%) 0.00 Anxiety; n (%) 1,150 (5.5%) 1,110 (5.3%) 1,033 (3.5%) 976 (3.3%) 3,117 (7.6%) 3,190 (7.8%) 5,300 (5.8%) 5,276 (5.8%) 0.00 Sileep_Disorder; n (%) 1,846 (8.9%) 1,847 (8.9%) 1,817 (8.7%) 2,953 (10.1%) 2,943 (10.1%) 3,774 (9.2%) 3,794 (9.2%) 3,579 (4.9%) 8,573 (9.4%) 8,580 (9.0%) Dementia; n (%) 520 (2.5%) 513 (2.5%) 436 (1.5%) 447 (1.4%) 2,620 (6.4%) 2,659 (6.5%) 3,576 (3.9%) 3,589 (3.9%) 0.00 Delirium; n (%) 139 (0.7%) 127 (0.6%) 150 (0.5%) 136 (0.5%) 569 (1.4%) 577 (1.4%) 858 (0.9%) 840 (0.9%) 0.00 Delirium; n (%) 160 (6.6%) 125 (0.5%) 149 (0.5%) 139 (0.5%) 704 (1.7%) 696 (1.7%) 969 (1.1%) 960 (1.1%) 9.00 Obesity; n (%) 2,583 (12.4%) 2,589 (12.5%) 1,765 (6.1%) 1,90 (4.7%) 4,272 (10.4%) 4,255 (10.3%) 8,620 (9.5%) 8,645 (9.5%) 0.00 Dementia; n (%) 17,18 (8.3%) 1,667 (8.0%) 1,199 (4.1%) 1,207 (4.1%) 4,251 (10.3%) 4,199 (10.2%) 7,168 (7.9%) 7,073 (7.8%) 0.00 Dementia; n (%) 150 (0.5%) 150 (0.5%) 139 (0.5%) 139 (0.5%) 1,100 (3.2%) 1,1										
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Asthma; n (%) 979 (4.7%) 1,013 (4.9%) 1,122 (3.8%) 1,110 (3.8%) 2,606 (6.3%) 2,618 (6.4%) 4,707 (5.2%) 4,741 (5.2%) 0.00										
Obstructive sieep apnea; n (%) 1,620 (7.8%) 1,611 (7.8%) 2,321 (8.0%) 2,286 (7.8%) 2,171 (5.3%) 2,191 (5.3%) 6,112 (6.7%) 6,088 (6.7%) 0.00										
	Obstructive sleep apnea; n (%)	1,620 (7.8%)	1,611 (7.8%)	2,321 (8.0%)	2,286 (7.8%)	2,1/1 (5.3%)	2,191 (5.3%)	6,112 (6./%)	6,088 (6.7%)	0.00

Pneumonia; n (%)	379 (1.8%)	378 (1.8%)	460 (1.6%)	466 (1.6%)	1,272 (3.1%)	1,258 (3.1%)	2,111 (2.3%)	2,102 (2.3%)	0.00
Imaging; n (%)	34 (0.2%)	19 (0.1%)	16 (0.1%)	17 (0.1%)	54 (0.1%)	51 (0.1%)	104 (0.1%)	87 (0.1%)	0.00
Diabetes Medications									
DM Medications - AGIs; n (%)	63 (0.3%)	65 (0.3%)	93 (0.3%)	80 (0.3%)	179 (0.4%)	192 (0.5%)	335 (0.4%)	337 (0.4%)	0.00
DM Medications - Glitazones; n (%)	2,628 (12.7%)	2,617 (12.6%)	5,543 (19.0%)	5,541 (19.0%)	4,414 (10.7%)	4,429 (10.8%)	12,585 (13.8%)	12,587 (13.8%)	0.00
DM Medications - GLP-1 RA; n (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	#VALUE!	#VALUE!	#VALUE!
DM Medications - Insulin; n (%)	3,259 (15.7%)	3,169 (15.3%)	3,930 (13.5%)	3,878 (13.3%)	7,703 (18.7%)	7,651 (18.6%)	14,892 (16.4%)	14,698 (16.1%)	0.01
DM Medications - Meglitinides; n (%)	334 (1.6%)	334 (1.6%)	752 (2.6%)	774 (2.7%)	1,119 (2.7%)	1,129 (2.7%)	2,205 (2.4%)	2,237 (2.5%)	-0.01
DM Medications - Metformin; n (%)	14,469 (69.7%)	14,670 (70.6%)	21,163 (72.6%)	21,117 (72.4%)	27,388 (66.6%)	27,400 (66.6%)	63,020 (69.2%)	63,187 (69.4%)	0.00
Concomitant initiation or current use of SGLT2i; n									
(%)	569 (2.7%)	540 (2.6%)	344 (1.2%)	349 (1.2%)	508 (1.2%)	516 (1.3%)	1,421 (1.6%)	1,405 (1.5%)	0.01
Concomitant initiation or current use of AGIs; n (%)	55 (0.3%)	45 (0.2%)	64 (0.2%)	49 (0.2%)	121 (0.3%)	125 (0.3%)	240 (0.3%)	219 (0.2%)	0.02
Concomitant initiation or current use of Glitazones; n (%)	1,515 (7.3%)	1,495 (7.2%)	3,216 (11.0%)	3,195 (11.0%)	2,710 (6.6%)	2,669 (6.5%)	7,441 (8.2%)	7,359 (8.1%)	0.00
Concomitant initiation or current use of GLP-1 RA; n									
(%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	000 (0.0%)	000 (0.0%)	#DIV/0!
Concomitant initiation or current use of Insulin; n									
(%)	2,393 (11.5%)	2,338 (11.3%)	2,955 (10.1%)	2,911 (10.0%)	5,862 (14.2%)	5,819 (14.1%)	11,210 (12.3%)	11,068 (12.2%)	0.00
Concomitant initiation or current use of	224 (1.10/)	226 (4.40/)	FO1 (1 70/)	FFO (4.00/)	700 (1.0%)	000 (1.00/)	4 535 /4 70/\	1 505 (1 00/)	0.01
Meglitinides; n (%) Concomitant initiation or current use of Metformin;	234 (1.1%)	236 (1.1%)	501 (1.7%)	559 (1.9%)	790 (1.9%)	800 (1.9%)	1,525 (1.7%)	1,595 (1.8%)	-0.01
n (%)	12,550 (60.4%)	12,734 (61.3%)	18,351 (63.0%)	18,424 (63.2%)	23,232 (56.5%)	23,281 (56.6%)	54,133 (59.4%)	54,439 (59.8%)	-0.01
Past use of SGLT2i; n (%)	232 (1.1%)	234 (1.1%)	108 (0.4%)	119 (0.4%)	203 (0.5%)	197 (0.5%)	543 (0.6%)	550 (0.6%)	0.00
Past use of AGIs; n (%)	8 (0.0%)	20 (0.1%)	29 (0.1%)	31 (0.1%)	58 (0.1%)	67 (0.2%)	095 (0.1%)	118 (0.1%)	0.00
Past use of Glitazones; n (%)	1,113 (5.4%)	1,122 (5.4%)	2,328 (8.0%)	2,346 (8.0%)	1,704 (4.1%)	1,760 (4.3%)	5,145 (5.6%)	5,228 (5.7%)	0.00
Past use of GLP-1 RA; n (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	000 (0.0%)	000 (0.0%)	#DIV/0!
Past use of Insulin; n (%)	866 (4.2%)	831 (4.0%)	975 (3.3%)	967 (3.3%)	1,841 (4.5%)	1,832 (4.5%)	3,682 (4.0%)	3,630 (4.0%)	0.00
Past use of Meglitinides; n (%)	100 (0.5%)	98 (0.5%)	251 (0.9%)	215 (0.7%)	329 (0.8%)	329 (0.8%)	680 (0.7%)	642 (0.7%)	0.00
Past use of metformin (final); n (%)	1,919 (9.2%)	1,936 (9.3%)	2,812 (9.6%)	2,693 (9.2%)	4,156 (10.1%)	4,119 (10.0%)	8,887 (9.8%)	8,748 (9.6%)	0.01
Other Medications									
Use of ACE inhibitors; n (%)	8,548 (41.2%)	8,588 (41.3%)	12,091 (41.5%)	12,183 (41.8%)	16,283 (39.6%)	16,298 (39.6%)	36,922 (40.5%)	37,069 (40.7%)	0.00
Use of ARBs; n (%)	6,027 (29.0%)	6,014 (29.0%)	9,104 (31.2%)	9,054 (31.1%)	13,919 (33.8%)	13,948 (33.9%)	29,050 (31.9%)	29,016 (31.9%)	0.00
Use of Loop Diuretics ; n (%)	2,050 (9.9%)	2,094 (10.1%)	3,016 (10.3%)	2,970 (10.2%)	7,243 (17.6%)	7,190 (17.5%)	12,309 (13.5%)	12,254 (13.5%)	0.00
Use of other diuretics; n (%)	487 (2.3%)	491 (2.4%)	679 (2.3%)	707 (2.4%)	1,337 (3.2%)	1,357 (3.3%)	2,503 (2.7%)	2,555 (2.8%)	-0.01
Use of nitrates-United; n (%)	972 (4.7%)	970 (4.7%)	1,432 (4.9%)	1,429 (4.9%)	3,294 (8.0%)	3,287 (8.0%)	5,698 (6.3%)	5,686 (6.2%)	0.00
Use of other hypertension drugs; n (%)	1,261 (6.1%)	1,250 (6.0%)	1,563 (5.4%)	1,535 (5.3%)	3,298 (8.0%)	3,334 (8.1%)	6,122 (6.7%)	6,119 (6.7%)	0.00
Use of digoxin; n (%)	412 (2.0%)	368 (1.8%)	600 (2.1%)	605 (2.1%)	1,533 (3.7%)	1,512 (3.7%)	2,545 (2.8%)	2,485 (2.7%)	0.01
Use of Anti-arrhythmics; n (%)	213 (1.0%)	211 (1.0%)	332 (1.1%)	348 (1.2%)	836 (2.0%)	819 (2.0%)	1,381 (1.5%)	1,378 (1.5%)	0.00
Use of COPD/asthma meds; n (%)	2,785 (13.4%)	2,794 (13.5%)	4,169 (14.3%)	4,167 (14.3%)	7,710 (18.7%)	7,674 (18.7%)	14,664 (16.1%)	14,635 (16.1%)	0.00
Use of statins; n (%)	13,588 (65.4%)	13,603 (65.5%)	19,039 (65.3%)	18,973 (65.1%)	28,374 (69.0%)	28,291 (68.8%)	61,001 (67.0%)	60,867 (66.8%)	0.00
Use of other lipid-lowering drugs; n (%)	3,030 (14.6%)	2,944 (14.2%)	5,019 (17.2%)	4,897 (16.8%)	5,994 (14.6%)	5,973 (14.5%)	14,043 (15.4%)	13,814 (15.2%)	0.01
Use of antiplatelet agents; n (%)	2,640 (12.7%)	2,605 (12.5%)	4,128 (14.2%)	4,089 (14.0%)	6,851 (16.7%)	6,953 (16.9%)	13,619 (15.0%)	13,647 (15.0%)	0.00
Use of oral anticoagulants (Dabigatran, Rivaroxaban,	1,112 (5.4%)	1,077 (5.2%)	1,464 (5.0%)	1,445 (5.0%)	3,637 (8.8%)	3,537 (8.6%)	6,213 (6.8%)	6.050 (6.79/)	0.00
Apixaban, Warfarin); n (%) Use of heparin and other low-molecular weight	1,112 (5.4%)	1,077 (3.2%)	1,464 (5.0%)	1,445 (5.0%)	3,037 (0.0%)	3,337 (0.0%)	0,213 (0.6%)	6,059 (6.7%)	0.00
heparins; n (%)	94 (0.5%)	90 (0.4%)	0 (0.0%)	1 (0.0%)	177 (0.4%)	169 (0.4%)	271 (0.3%)	260 (0.3%)	0.00
Use of NSAIDs; n (%)	3,123 (15.0%)	3,100 (14.9%)	4,272 (14.7%)	4,343 (14.9%)	7,170 (17.4%)	7,301 (17.7%)	14,565 (16.0%)	14,744 (16.2%)	-0.01
Use of oral corticosteroids; n (%)	2,722 (13.1%)	2,663 (12.8%)	3,635 (12.5%)	3,677 (12.6%)	6,754 (16.4%)	6,571 (16.0%)	13,111 (14.4%)	12,911 (14.2%)	0.01
Use of bisphosphonate (United); n (%)	628 (3.0%)	603 (2.9%)	612 (2.1%)	637 (2.2%)	1,921 (4.7%)	1,970 (4.8%)	3,161 (3.5%)	3,210 (3.5%)	0.00
Use of opioids; n (%)	4,763 (22.9%)	4,735 (22.8%)	7,046 (24.2%)	6,977 (23.9%)	10,491 (25.5%)	10,563 (25.7%)	22,300 (24.5%)	22,275 (24.5%)	0.00
Use of antidepressants; n (%)	4,125 (19.9%)	4,035 (19.4%)	5,686 (19.5%)	5,621 (19.3%)	10,351 (25.2%)	10,384 (25.2%)	20,162 (22.1%)	20,040 (22.0%)	0.00
Use of antipsychotics; n (%)	358 (1.7%)	369 (1.8%)	454 (1.6%)	432 (1.5%)	1,440 (3.5%)	1,456 (3.5%)	2,252 (2.5%)	2,257 (2.5%)	0.00
Use of anticonvulsants; n (%)	2,400 (11.6%)	2,374 (11.4%)	2,784 (9.6%)	2,730 (9.4%)	6,445 (15.7%)	6,460 (15.7%)	11,629 (12.8%)	11,564 (12.7%)	0.00
Use of lithium; n (%)	22 (0.1%)	23 (0.1%)	45 (0.2%)	26 (0.1%)	66 (0.2%)	43 (0.1%)	133 (0.1%)	092 (0.1%)	0.00
Use of Benzos; n (%)	1,724 (8.3%)	1,648 (7.9%)	2,989 (10.3%)	2,963 (10.2%)	3,802 (9.2%)	3,787 (9.2%)	8,515 (9.4%)	8,398 (9.2%)	0.01
Use of anxiolytics/hypnotics; n (%)	1,306 (6.3%)	1,300 (6.3%)	2,107 (7.2%)	1,988 (6.8%)	3,334 (8.1%)	3,334 (8.1%)	6,747 (7.4%)	6,622 (7.3%)	0.00
Use of dementia meds; n (%)	360 (1.7%)	361 (1.7%)	378 (1.3%)	365 (1.3%)	2,292 (5.6%)	2,350 (5.7%)	3,030 (3.3%)	3,076 (3.4%)	-0.01
Use of antiparkinsonian meds; n (%)	401 (1.9%)	410 (2.0%)	571 (2.0%)	556 (1.9%)	1,325 (3.2%)	1,332 (3.2%)	2,297 (2.5%)	2,298 (2.5%)	0.00
Any use of pramlintide; n (%)	8 (0.0%)	11 (0.1%)	20 (0.1%)	38 (0.1%)	5 (0.0%)	12 (0.0%)	033 (0.0%)	061 (0.1%)	-0.04
Any use of 1st generation sulfonylureas; n (%)	3 (0.0%)	5 (0.0%)	21 (0.1%)	8 (0.0%)	31 (0.1%)	19 (0.0%)	055 (0.1%)	032 (0.0%)	0.00 0.00
Entresto (sacubitril/valsartan); n (%) Initiation as monotherapy ; n (%)	9 (0.0%) 4,379 (21.1%)	16 (0.1%) 4,352 (21.0%)	1 (0.0%) 5,359 (18.4%)	1 (0.0%) 5,432 (18.6%)	6 (0.0%) 6,352 (15.4%)	11 (0.0%) 6,427 (15.6%)	016 (0.0%) 16,090 (17.7%)	028 (0.0%) 16,211 (17.8%)	0.00
Labs	4,3/3 (21.1%)	4,332 (21.0%)	3,339 (10.4%)	3,432 (10.0%)	0,532 (13.4%)	0,427 (13.0%)	16,090 (17.7%) 49,922	16,211 (17.8%) 49,922	0.00
Lab values- HbA1c (%) ; n (%)	6,855 (33.0%)	7,389 (35.6%)	1,708 (5.9%)	1,595 (5.5%)	N/A	N/A	8,563 (17.2%)	8,984 (18.0%)	-0.02
Lab values-HbA1c (%) (within 3 months); n (%)	5,387 (25.9%)	5,927 (28.5%)	1,324 (4.5%)	1,266 (4.3%)	N/A	N/A	6,711 (13.4%)	7,193 (14.4%)	-0.02
Lab values- HbA1c (%) (within 6 months); n (%)	6,855 (33.0%)	7,389 (35.6%)	1,708 (5.9%)	1,595 (5.5%)	N/A	N/A	8,563 (17.2%)	8,984 (18.0%)	-0.02
Lab values- BNP; n (%)	95 (0.5%)	97 (0.5%)	13 (0.0%)	19 (0.1%)	N/A	N/A	108 (0.2%)	116 (0.2%)	0.00
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Lab values- BNP (within 3 months); n (%)	54 (0.3%)	60 (0.3%)	5 (0.0%)	10 (0.0%)	N/A	N/A	059 (0.1%)	070 (0.1%)	0.00
Lab values- BNP (within 6 months); n (%)	95 (0.5%)	97 (0.5%)	13 (0.0%)	19 (0.1%)	N/A	N/A	108 (0.2%)	116 (0.2%)	0.00
Lab values- BUN (mg/dl); n (%)	7,159 (34.5%)	7,737 (37.2%)	1,493 (5.1%)	1,670 (5.7%)	N/A	N/A	8,652 (17.3%)	9,407 (18.8%)	-0.04
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Lab values- BUN (mg/dl) (within 3 months); n (%)	5,533 (26.6%)	6,143 (29.6%)	1,160 (4.0%)	1,300 (4.5%)	N/A	N/A	6,693 (13.4%)	7,443 (14.9%)	-0.04
Lab values- BUN (mg/dl) (within 6 months); n (%)	7,159 (34.5%)	7,737 (37.2%)	1,493 (5.1%)	1,670 (5.7%)	N/A	N/A	8,652 (17.3%)	9,407 (18.8%)	-0.04
Lab values- Creatinine (mg/dl); n (%)	7,273 (35.0%)	7,904 (38.1%)	1,541 (5.3%)	1,728 (5.9%)	N/A	N/A	8,814 (17.7%)	9,632 (19.3%)	-0.04
Lab values- Creatinine (mg/dl) (within 3 months); n	7,273 (33.070)	7,501 (50.170)	1,5 .1 (5.570)	1,720 (3.370)	,	,	0,011(17.770)	3,032 (13.370)	0.01
(%)	5,629 (27.1%)	6,283 (30.2%)	1,192 (4.1%)	1,342 (4.6%)	N/A	N/A	6,821 (13.7%)	7,625 (15.3%)	-0.05
Lab values- Creatinine (mg/dl) (within 6 months); n									
(%)	7,273 (35.0%)	7,904 (38.1%)	1,541 (5.3%)	1,728 (5.9%)	N/A	N/A	8,814 (17.7%)	9,632 (19.3%)	-0.04
Lab values- HDL level (mg/dl); n (%)	6,230 (30.0%)	6,623 (31.9%)	1,540 (5.3%)	1,484 (5.1%)	N/A	N/A	7,770 (15.6%)	8,107 (16.2%)	-0.02
Edb values Tibe level (Hig/ul/), II (70)	0,230 (30.0%)	0,023 (31.370)	1,540 (5.570)	1,404 (3.170)	N/A	14/4	7,770 (15.070)	0,107 (10.270)	0.02
Lab values- HDL level (mg/dl) (within 3 months); n (%)	4,634 (22.3%)	5,024 (24.2%)	1,143 (3.9%)	1,117 (3.8%)	N/A	N/A	5,777 (11.6%)	6,141 (12.3%)	-0.02
Lab values- HDL level (mg/dl) (within 6 months); n (%)	6,230 (30.0%)	6,623 (31.9%)	1,540 (5.3%)	1,484 (5.1%)	N/A	N/A	7,770 (15.6%)	8,107 (16.2%)	-0.02
Lab values-LDL level (mg/dl) ; n (%)	6,312 (30.4%)	6,695 (32.2%)	1,631 (5.6%)	1,508 (5.2%)	N/A	N/A	7,943 (15.9%)	8,203 (16.4%)	-0.01
Lab values- LDL level (Ilig/ul) , Il (%)	6,312 (30.4%)	0,093 (32.2%)	1,031 (3.0%)	1,508 (5.2%)	N/A	N/A	7,943 (13.9%)	8,203 (16.4%)	-0.01
Lab values- LDL level (mg/dl) (within 3 months); n (%)	4,683 (22.5%)	5,091 (24.5%)	1,211 (4.2%)	1,133 (3.9%)	N/A	N/A	5,894 (11.8%)	6,224 (12.5%)	-0.02
Lab values-LDL level (mg/dl) (within 6 months); n (%)	6,312 (30.4%)	6,695 (32.2%)	1,631 (5.6%)	1,508 (5.2%)	N/A	N/A	7.943 (15.9%)	8,203 (16.4%)	-0.01
Lab values- NT-proBNP; n (%)			0 (0.0%)	1 (0.0%)	•	•	06 (0.0%)	0 (0.0%)	3.01
	6 (0.0%)	18 (0.1%)			N/A	N/A			-
Lab values- NT-proBNP (within 3 months); n (%)	5 (0.0%)	13 (0.1%)	0 (0.0%)	1 (0.0%)	N/A	N/A	05 (0.0%)	0 (0.0%)	-
Lab values- NT-proBNP (within 6 months); n (%)	6 (0.0%)	18 (0.1%)	0 (0.0%)	1 (0.0%)	N/A	N/A	06 (0.0%)	19 (0.0%)	-
Lab values-Total cholesterol (mg/dl); n (%)	6,283 (30.2%)	6,730 (32.4%)	1,564 (5.4%)	1,521 (5.2%)	N/A	N/A	7,847 (15.7%)	8,251 (16.5%)	-0.02
	0,203 (30.2%)	0,730 (32.470)	1,504 (5.470)	1,321 (3.270)	N/A	14/4	7,047 (15.770)	0,231 (10.370)	0.02
Lab values-Total cholesterol (mg/dl) (within 3									
months); n (%)	4,661 (22.4%)	5,114 (24.6%)	1,155 (4.0%)	1,147 (3.9%)	N/A	N/A	5,816 (11.7%)	6,261 (12.5%)	-0.02
Lab values-Total cholesterol (mg/dl) (within 6									
months); n (%)	6,283 (30.2%)	6,730 (32.4%)	1,564 (5.4%)	1,521 (5.2%)	N/A	N/A	7,847 (15.7%)	8,251 (16.5%)	-0.02
Lab values- Triglyceride level (mg/dl); n (%)	6,237 (30.0%)	6,704 (32.3%)	1,531 (5.3%)	1,485 (5.1%)	N/A	N/A	7,768 (15.6%)	8,189 (16.4%)	-0.02
	0,237 (30.0%)	0,704 (32.376)	1,551 (5.5%)	1,483 (3.178)	N/A	N/A	7,708 (13.0%)	8,189 (10.478)	-0.02
Lab values- Triglyceride level (mg/dl) (within 3									
months); n (%)	4,640 (22.3%)	5,099 (24.5%)	1,134 (3.9%)	1,118 (3.8%)	N/A	N/A	5,774 (11.6%)	6,217 (12.5%)	-0.03
Lab values-Triglyceride level (mg/dl) (within 6									
months); n (%)	6,237 (30.0%)	6,704 (32.3%)	1,531 (5.3%)	1,485 (5.1%)	N/A	N/A	7,768 (15.6%)	8,189 (16.4%)	-0.02
	0,237 (30.070)	0,701 (32.370)	1,551 (5.570)	1,103 (3.170)	,	,	7,700 (15.070)	0,203 (20.170)	0.02
Lab result number- HbA1c (%) mean (only 2 to 20									
included)	6,825	7,368	1,534	1,504	N/A	N/A	8,359	8,872	
mean (sd)	8.18 (1.81)	7.95 (1.71)	8.20 (1.81)	8.03 (1.81)	N/A	N/A	8.18 (1.81)	7.96 (1.73)	0.12
median [IQR]	7.70 [6.95, 9.00]	7.50 [6.80, 8.65]	7.70 [7.00, 9.00]	7.50 [6.80, 8.70]	N/A	N/A	7.70 (1.81)	7.50 (1.73)	0.11
Missing; n (%)	13,947 (67.1%)	13,404 (64.5%)	27,616 (94.7%)	27,646 (94.8%)	N/A	N/A	41,563 (83.3%)	41,050 (82.2%)	0.03
	. , ,				·	·		,	0.03
Lab result number- BNP mean	95	97	13	19	N/A	N/A	108	116	
mean (sd)	164.54 (440.30)	152.44 (201.22)	116.99 (165.82)	238.55 (559.75)	N/A	N/A	158.82 (420.35)	166.54 (290.36)	-0.02
median [IQR]	72.10 [21.70, 154.80]	85.00 [32.40, 195.85]	46.40 [21.45, 142.90]	30.00 [17.00, 112.00]	N/A	N/A	#VALUE!	#VALUE!	#VALUE!
Missing; n (%)	20,677 (99.5%)	20,675 (99.5%)	29,137 (100.0%)	29,131 (99.9%)	N/A	N/A	49,814 (99.8%)	49,806 (99.8%)	0.00
						·			0.00
Lab result number- BUN (mg/dl) mean	7,159	7,737	1,493	1,670	N/A	N/A	8,652	9,407	
mean (sd)	18.18 (7.32)	18.03 (7.12)	472.97 (9,177.52)	373.82 (7,794.27)	N/A	N/A	96.66 (3811.78)	81.19 (3283.58)	0.00
median [IQR]	17.00 [13.50, 21.00]	16.50 [13.50, 21.00]	17.00 [14.00, 20.50]	17.00 [13.00, 20.00]	N/A	N/A	#VALUE!	#VALUE!	#VALUE!
Missing; n (%)	13,613 (65.5%)	13,035 (62.8%)	27,657 (94.9%)	27,480 (94.3%)	N/A	N/A	41,270 (82.7%)	40,515 (81.2%)	0.04
	13,013 (03.5%)	13,033 (02.8%)	21,001 (34.9%)	27,400 (34.3%)	IN/A	IN/A	41,210 (02.170)	40,513 (01.2%)	0.04
Lab result number- Creatinine (mg/dl) mean (only 0.1									
to 15 included)	7,235	7,867	1,505	1,683	N/A	N/A	8,740	9,550	
mean (sd)	1.01 (0.36)	1.01 (0.35)	0.97 (0.29)	0.99 (0.33)	N/A	N/A	1.00 (0.35)	1.01 (0.35)	-0.03
median [IQR]	0.94 [0.79, 1.14]	0.95 [0.80, 1.13]	0.93 [0.79, 1.09]	0.93 [0.80, 1.10]	N/A	N/A	0.94 (0.35)	0.95 (0.35)	-0.03
						,			
Missing; n (%)	13,537 (65.2%)	12,905 (62.1%)	27,645 (94.8%)	27,467 (94.2%)	N/A	N/A	41,182 (82.5%)	40,372 (80.9%)	0.04
Lab result number- HDL level (mg/dl) mean (only									
=<5000 included)	6,230	6,623	1,539	1,481	N/A	N/A	7,769	8,104	
mean (sd)	45.66 (13.30)	46.38 (13.32)	44.68 (13.91)	45.39 (13.98)	N/A	N/A	45.47 (13.42)	46.20 (13.44)	-0.05
		, ,							
median [IQR]	44.00 [37.00, 53.00]	44.00 [37.00, 53.00]	43.00 [36.00, 52.00]	44.00 [37.00, 52.50]	N/A	N/A	43.80 (13.42)	44.00 (13.44)	-0.01
Missing; n (%)	14,542 (70.0%)	14,149 (68.1%)	27,611 (94.7%)	27,669 (94.9%)	N/A	N/A	42,153 (84.4%)	41,818 (83.8%)	0.02
Lab result number- LDL level (mg/dl) mean (only									
=<5000 included)	6,194	6,595	1,490	1,436	N/A	N/A	7,684	8,031	
mean (sd)	87.61 (40.85)	87.44 (38.52)	87.29 (41.68)	89.25 (40.99)	N/A	N/A	87.55 (41.01)	87.76 (38.98)	-0.01
	, ,	, ,	, ,	, ,		·	, ,	, ,	
median [IQR]	85.00 [63.00, 112.00]	84.00 [64.00, 109.00]	86.00 [63.44, 113.00]	87.00 [65.00, 112.38]	N/A	N/A	85.19 (41.01)	84.54 (38.98)	0.02
Missing; n (%)	14,578 (70.2%)	14,177 (68.3%)	27,660 (94.9%)	27,714 (95.1%)	N/A	N/A	42,238 (84.6%)	41,891 (83.9%)	0.02
Lab result number-Total cholesterol (mg/dl) mean									
(only =<5000 included)	6,281	6,727	1,562	1,515	N/A	N/A	7,843	8,242	
									0.00
mean (sd)	176.40 (48.75)	172.97 (46.09)	176.21 (49.12)	174.96 (49.83)	N/A	N/A	176.36 (48.83)	173.34 (46.80)	0.06
median [IQR]	170.00 [144.00, 201.00]	166.00 [143.00, 197.00]	172.00 [145.50, 203.00]	169.50 [145.50, 201.00]	N/A	N/A	170.40 (48.83)	166.64 (46.80)	0.08
Missing; n (%)	14,491 (69.8%)	14,045 (67.6%)	27,588 (94.6%)	27,635 (94.8%)	N/A	N/A	42,079 (84.3%)	41,680 (83.5%)	0.02
Lab result number- Triglyceride level (mg/dl) mean	, - ()	, (- =)	,,-		• *	• •	\/	(/-/	
(only =<5000 included)	6,236	6,703	1,530	1,482	N/A	N/A	7,766	8,185	
(only =<5000 included)	0,230	6,703	1,530	1,482	N/A	N/A	7,700	0,185	

mean (sd)	198.52 (201.95)	179.80 (153.29)	201.91 (196.77)	188.19 (193.76)	N/A	N/A	199.19 (200.95)	181.32 (161.38)	0.10
median [IQR]		147.50 [105.00, 210.00]			N/A	N/A	155.39 (200.95)	147.95 (161.38)	0.04
Missing; n (%)	14,536 (70.0%)	14,069 (67.7%)	27,620 (94.8%)	27,668 (94.9%)	N/A	N/A	42,156 (84.4%)	41,737 (83.6%)	0.02
Lab result number- Hemoglobin mean (only >0									
included)	5,023	5,290	944	1,027	N/A	N/A	5,967	6,317	
mean (sd)	13.70 (1.67)	13.72 (1.69)	11,075.13 (325,562.43)	522.41 (8,421.85)	N/A	N/A	1763.66 (129455.74)	96.42 (3394.92)	0.02
median [IQR]	13.80 [12.60, 14.80]	13.80 [12.60, 14.90]	13.90 [12.80, 15.00]	14.00 [12.90, 15.00]	N/A	N/A	#VALUE!	#VALUE!	#VALUE!
Missing; n (%)	15,749 (75.8%)	15,482 (74.5%)	28,206 (96.8%)	28,123 (96.5%)	N/A	N/A	43,955 (88.0%)	43,605 (87.3%)	0.02
Lab result number- Serum sodium mean (only > 90	13,743 (73.070)	13,402 (74.370)	20,200 (50.070)	20,123 (30.3%)	14/5	14/15	43,333 (66.676)	45,005 (67.570)	0.02
and < 190 included)	7,115	7,732	1,415	1,597	N/A	N/A	8,530	9,329	
					•	·			-0.08
mean (sd)	139.13 (2.80)	139.38 (2.70)	138.84 (2.60)	138.94 (2.61)	N/A	N/A	139.08 (2.77)	139.30 (2.68)	
median [IQR]	139.00 [137.67, 141.00]		139.00 [137.00, 140.50]	139.00 [137.50, 141.00]	N/A	N/A	139.00 (2.77)	139.41 (2.68)	-0.15
Missing; n (%)	13,657 (65.7%)	13,040 (62.8%)	27,735 (95.1%)	27,553 (94.5%)	N/A	N/A	41,392 (82.9%)	40,593 (81.3%)	0.04
Lab result number- Albumin mean (only >0 and <=10									
included)	6,700	7,308	1,299	1,463	N/A	N/A	7,999	8,771	
mean (sd)	4.27 (0.32)	4.28 (0.32)	4.25 (0.46)	4.24 (0.58)	N/A	N/A	4.27 (0.35)	4.27 (0.38)	0.00
median [IQR]	4.30 [4.10, 4.50]	4.30 [4.10, 4.50]	4.30 [4.10, 4.50]	4.30 [4.10, 4.50]	N/A	N/A	4.30 (0.35)	4.30 (0.38)	0.00
Missing; n (%)	14,072 (67.7%)	13,464 (64.8%)	27,851 (95.5%)	27,687 (95.0%)	N/A	N/A	41,923 (84.0%)	41,151 (82.4%)	0.04
Lab result number- Glucose (fasting or random) mean	14,072 (07.770)	13,404 (04.0%)	27,031 (33.370)	27,007 (33.0%)	14/5	14/15	41,323 (04.070)	41,131 (02.470)	0.04
	7,121	7,744	1,371	1,522	N/A	N/A	8,492	9,266	
(only 10-1000 included)									0.44
mean (sd)	170.54 (71.23)	163.02 (65.86)	172.40 (71.73)	164.90 (65.90)	N/A	N/A	170.84 (71.32)	163.33 (65.87)	0.11
median [IQR]	152.00 [123.75, 198.33]		156.00 [125.00, 200.50]	148.00 [121.38, 192.00]	N/A	N/A	152.65 (71.32)	146.33 (65.87)	0.09
Missing; n (%)	13,651 (65.7%)	13,028 (62.7%)	27,779 (95.3%)	27,628 (94.8%)	N/A	N/A	41,430 (83.0%)	40,656 (81.4%)	0.04
Lab result number- Potassium mean (only 1-7									
included)	7,219	7,828	1,482	1,636	N/A	N/A	8,701	9,464	
mean (sd)	4.42 (0.43)	4.40 (0.42)	4.38 (0.40)	4.39 (0.41)	N/A	N/A	4.41 (0.43)	4.40 (0.42)	0.02
median [IQR]	4.40 [4.13, 4.70]	4.40 [4.10, 4.65]	4.40 [4.10, 4.60]	4.40 [4.10, 4.60]	N/A	N/A	4.40 (0.43)	4.40 (0.42)	0.00
Missing; n (%)	13,553 (65.2%)	12,944 (62.3%)	27,668 (94.9%)	27,514 (94.4%)	N/A	N/A	41,221 (82.6%)	40,458 (81.0%)	0.04
Comorbidity Scores	13,555 (65.270)	12,5 1 1 (02.5%)	27,000 (5 1.570)	27,521 (5111,6)			11,221 (02.070)	10,130 (02.070)	0.0 .
CCI (180 days)- ICD9 and ICD10	/>	/				()	/ \		
mean (sd)	2.25 (1.79)	2.24 (1.79)	1.62 (1.51)	1.62 (1.50)	2.87 (2.04)	2.88 (2.07)	2.33 (1.83)	2.33 (1.84)	0.00
median [IQR]	2.00 [1.00, 3.00]	2.00 [1.00, 3.00]	1.00 [1.00, 2.00]	1.00 [1.00, 2.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]	1.68 (1.83)	1.68 (1.84)	0.00
Frailty Score: Qualitative Version 365 days as									
Categories,									
0; n (%)	8,392 (40.4%)	8,404 (40.5%)	10,050 (34.5%)	10,096 (34.6%)	9,086 (22.1%)	8,951 (21.8%)	27,528 (30.2%)	27,451 (30.1%)	0.00
1 to 2; n (%)	7,972 (38.4%)	7,860 (37.8%)	13,116 (45.0%)	13,180 (45.2%)	15,015 (36.5%)	14,927 (36.3%)	36,103 (39.6%)	35,967 (39.5%)	0.00
3 or more; n (%)	4,408 (21.2%)	4,508 (21.7%)	5,984 (20.5%)	5,874 (20.2%)	17,040 (41.4%)	17,263 (42.0%)	27,432 (30.1%)	27,645 (30.4%)	-0.01
Frailty Score: Empirical Version 365 days as	1,100 (21.270)	1,500 (2117,0)	3,50 . (20.570)	3,07 (20.270)	17,010 (11.170)	17,200 (12.070)	27,132 (30.270)	27,013 (30.170)	0.01
Categories,	()								
<0.12908; n (%)	5,862 (28.2%)	6,186 (29.8%)	8,421 (28.9%)	8,678 (29.8%)	4,443 (10.8%)	4,810 (11.7%)	18,726 (20.6%)	19,674 (21.6%)	-0.02
0.12908 - 0.1631167; n (%)	6,990 (33.7%)	6,791 (32.7%)	10,018 (34.4%)	9,960 (34.2%)	9,817 (23.9%)	9,685 (23.5%)	26,825 (29.5%)	26,436 (29.0%)	0.01
>= 0.1631167; n (%)	7,920 (38.1%)	7,795 (37.5%)	10,711 (36.7%)	10,512 (36.1%)	26,881 (65.3%)	26,646 (64.8%)	45,512 (50.0%)	44,953 (49.4%)	0.01
Non-Frailty; n (%)	11,629 (56.0%)	11,843 (57.0%)	15,184 (52.1%)	15,193 (52.1%)	1,784 (4.3%)	1,488 (3.6%)	28,597 (31.4%)	28,524 (31.3%)	0.00
Frailty Score (mean): Qualitative Version 365 days,									
mean (sd)	1.47 (1.87)	1.49 (1.90)	1.48 (1.71)	1.47 (1.68)	2.50 (2.34)	2.53 (2.36)	1.94 (2.05)	1.95 (2.06)	0.00
median [IQR]	1.00 [0.00, 2.00]	1.00 [0.00, 2.00]	1.00 [0.00, 2.00]	1.00 [0.00, 2.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]	1.45 (2.05)	1.45 (2.06)	0.00
Frailty Score (mean): Empirical Version 365 days,									
	0.15 (0.05)	0.15 (0.05)	0.15 (0.05)	0.15 (0.05)	0.19 (0.07)	0.19 (0.07)	0.17 (0.06)	0.17 (0.06)	0.00
mean (sd)	, ,	, ,	, ,	, ,	, ,	, ,	, ,		
median [IQR]	0.14 [0.11, 0.17]	0.13 [0.11, 0.17]	0.14 [0.12, 0.17]	0.14 [0.12, 0.17]	0.18 [0.15, 0.23]	0.18 [0.15, 0.23]	0.16 (0.06)	0.16 (0.06)	0.00
Healthcare Utilization									
Any hospitalization; n (%)	1,502 (7.2%)	1,425 (6.9%)	2,187 (7.5%)	2,073 (7.1%)	3,930 (9.6%)	3,921 (9.5%)	7,619 (8.4%)	7,419 (8.1%)	0.01
Any hospitalization within prior 30 days; n (%)	374 (1.8%)	352 (1.7%)	471 (1.6%)	428 (1.5%)	1,064 (2.6%)	1,044 (2.5%)	1,909 (2.1%)	1,824 (2.0%)	0.01
Any hospitalization during prior 31-180 days; n (%)	1,167 (5.6%)	1,121 (5.4%)	1,765 (6.1%)	1,706 (5.9%)	3,034 (7.4%)	3,095 (7.5%)	5,966 (6.6%)	5,922 (6.5%)	0.00
Endocrinologist Visit; n (%)	2,056 (9.9%)	1,969 (9.5%)	2,764 (9.5%)	2,681 (9.2%)	4,912 (11.9%)	4,908 (11.9%)	9,732 (10.7%)	9,558 (10.5%)	0.01
Endocrinologist Visit (30 days prior); n (%)	1,317 (6.3%)	1,266 (6.1%)	1,957 (6.7%)	1,885 (6.5%)	3,127 (7.6%)	3,017 (7.3%)	6,401 (7.0%)	6,168 (6.8%)	0.01
Endocrinologist Visit (30 days prior); n (%)	1,458 (7.0%)	1,377 (6.6%)	1,868 (6.4%)	1,813 (6.2%)	3,777 (9.2%)	3,709 (9.0%)	7,103 (7.8%)	6,899 (7.6%)	0.01
Internal medicine/family medicine visits; n (%)	16,288 (78.4%)	16,010 (77.1%)	25,399 (87.1%)	25,335 (86.9%)	35,174 (85.5%)	34,931 (84.9%)	76,861 (84.4%)	76,276 (83.8%)	0.02
Internal medicine/family medicine visits (30 days									
prior) ; n (%)	11,885 (57.2%)	11,951 (57.5%)	19,584 (67.2%)	19,656 (67.4%)	25,464 (61.9%)	25,427 (61.8%)	56,933 (62.5%)	57,034 (62.6%)	0.00
Internal medicine/family medicine visits (31 to 180									
days prior) ; n (%)	13,833 (66.6%)	13,782 (66.3%)	21,677 (74.4%)	21,565 (74.0%)	31,293 (76.1%)	31,269 (76.0%)	66,803 (73.4%)	66,616 (73.2%)	0.00
Cardiologist visit; n (%)	5,579 (26.9%)	5,471 (26.3%)	6,873 (23.6%)	6,760 (23.2%)	14,871 (36.1%)	14,709 (35.8%)	27,323 (30.0%)	26,940 (29.6%)	0.01
Number of Cardiologist visits (30 days prior); n (%)	1,938 (9.3%)	1,952 (9.4%)	2,477 (8.5%)	2,433 (8.3%)	5,195 (12.6%)	5,200 (12.6%)	9,610 (10.6%)	9,585 (10.5%)	0.00
Number of Cardiologist visits (31 to 180 days prior);	. (/	,							
n (%)	4,732 (22.8%)	4,630 (22.3%)	5,725 (19.6%)	5,657 (19.4%)	12,978 (31.5%)	12,880 (31.3%)	23,435 (25.7%)	23,167 (25.4%)	0.01
Electrocardiogram ; n (%)	6,245 (30.1%)	6,406 (30.8%)	8,940 (30.7%)	9,246 (31.7%)	14,823 (36.0%)	15,158 (36.8%)	30,008 (33.0%)	30,810 (33.8%)	-0.02
	2,2 .3 (33.170)	2, 100 (55.670)	2,3 .0 (30.770)	-,0(51)	,5 (55.575)	,0 (50.070)	,-30 (33.070)	,0 (55.573)	0.02

Use of glucose test strips; n (%)	876 (4.2%)	852 (4.1%)	1,297 (4.4%)	1,275 (4.4%)	1,535 (3.7%)	1,529 (3.7%)	3,708 (4.1%)	3,656 (4.0%)	0.01
Dialysis; n (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	000 (0.0%)	000 (0.0%)	#DIV/0!
Naive new user ; n (%)	6,124 (29.5%)	6,035 (29.1%)	7,314 (25.1%)	7,406 (25.4%)	9,743 (23.7%)	9,800 (23.8%)	23,181 (25.5%)	23,241 (25.5%)	0.00
N antidiabetic drugs at index date	-, (,	-, ()	. , (====,=,	.,	-, (==)	0,000 (20.0)			
mean (sd)	1.83 (0.69)	1.84 (0.66)	1.87 (0.70)	1.87 (0.67)	1.81 (0.69)	1.81 (0.66)	1.83 (0.69)	1.84 (0.66)	-0.01
median [IQR]	2.00 [1.00, 2.00]	2.00 [1.00, 2.00]	2.00 [1.00, 2.00]	2.00 [1.00, 2.00]	2.00 [1.00, 2.00]	2.00 [1.00, 2.00]	2.00 (0.69)	2.00 (0.66)	0.00
number of different/distinct medication						,	,		
prescriptions									
mean (sd)	9.09 (4.65)	9.01 (4.67)	9.07 (4.49)	9.01 (4.54)	10.17 (4.92)	10.14 (5.03)	9.57 (4.72)	9.52 (4.80)	0.01
median [IQR]	8.00 [6.00, 12.00]	8.00 [6.00, 12.00]	8.00 [6.00, 11.00]	8.00 [6.00, 11.00]	9.00 [7.00, 13.00]	9.00 [7.00, 13.00]	8.45 (4.72)	8.45 (4.80)	0.00
Number of Hospitalizations									
mean (sd)	0.08 (0.33)	0.08 (0.33)	0.09 (0.33)	0.08 (0.32)	0.12 (0.43)	0.12 (0.42)	0.10 (0.38)	0.10 (0.37)	0.00
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 (0.38)	0.00 (0.37)	0.00
Number of hospital days									
mean (sd)	0.44 (2.40)	0.44 (2.26)	0.45 (2.24)	0.43 (2.33)	0.74 (3.54)	0.72 (3.58)	0.58 (2.93)	0.56 (2.95)	0.01
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 (2.93)	0.00 (2.95)	0.00
Number of Emergency Department (ED) visits									
mean (sd)	0.30 (0.92)	0.28 (0.89)	0.12 (1.08)	0.11 (1.03)	0.49 (1.25)	0.48 (1.27)	0.33 (1.13)	0.32 (1.12)	0.01
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 (1.13)	0.00 (1.12)	0.00
Number of Office visits									
mean (sd)	5.00 (4.34)	4.92 (3.86)	5.09 (4.75)	5.03 (3.99)	6.36 (5.21)	6.30 (4.81)	5.64 (4.88)	5.58 (4.35)	0.01
median [IQR]	4.00 [2.00, 7.00]	4.00 [2.00, 6.00]	4.00 [2.00, 7.00]	4.00 [2.00, 6.25]	5.00 [3.00, 8.00]	5.00 [3.00, 8.00]	4.45 (4.88)	4.45 (4.35)	0.00
Number of Endocrinologist visits									
mean (sd)	0.52 (2.53)	0.49 (2.46)	0.47 (2.21)	0.52 (2.67)	0.76 (3.62)	0.81 (3.84)	0.61 (2.99)	0.64 (3.21)	-0.01
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 (2.99)	0.00 (3.21)	0.00
Number of internal medicine/family medicine visits									
mean (sd)	8.48 (13.64)	7.91 (12.09)	7.23 (9.90)	7.35 (9.32)	8.91 (11.47)	9.17 (11.81)	8.27 (11.54)	8.30 (11.14)	0.00
median [IQR]	5.00 [1.00, 11.00]	5.00 [1.00, 11.00]	5.00 [2.00, 9.00]	5.00 [2.00, 10.00]	5.00 [2.00, 12.00]	6.00 [2.00, 12.00]	5.00 (11.54)	5.45 (11.14)	-0.04
Number of Cardiologist visits								()	
mean (sd)	1.35 (3.78)	1.35 (3.98)	1.07 (3.16)	1.07 (3.34)	2.05 (5.09)	2.03 (4.87)	1.58 (4.26)	1.57 (4.23)	0.00
median [IQR]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 2.00]	0.00 [0.00, 2.00]	0.00 (4.26)	0.00 (4.23)	0.00
Number electrocardiograms received	0.54 (4.40)	0.52 (4.45)	0.53 (4.43)	0.53 (4.00)	0.72 (4.27)	0.72 (4.25)	0.62 (4.25)	0.62 (4.22)	0.00
mean (sd)	0.54 (1.19)	0.53 (1.15)	0.53 (1.12)	0.53 (1.08)	0.72 (1.37)	0.73 (1.35)	0.62 (1.25)	0.62 (1.22)	0.00 0.00
median [IQR]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 (1.25)	0.00 (1.22)	0.00
Number of HbA1c tests ordered	1.26 (0.02)	1 35 (0 07)	1.04(0.03)	1.03 (0.90)	1 42 (0 07)	1 42 (0 00)	1.27 (0.95)	1 36 (0 00)	0.01
mean (sd)	1.26 (0.93) 1.00 [1.00, 2.00]	1.25 (0.87) 1.00 [1.00, 2.00]	1.04 (0.93) 1.00 [0.00, 2.00]		1.43 (0.97)	1.42 (0.90)		1.26 (0.89)	0.00
median [IQR]	1.00 [1.00, 2.00]	1.00 [1.00, 2.00]	1.00 [0.00, 2.00]	1.00 [0.00, 2.00]	1.00 [1.00, 2.00]	1.00 [1.00, 2.00]	1.00 (0.95)	1.00 (0.89)	0.00
Number of glucose tests orderedmean (sd)	0.49 (2.88)	0.48 (1.61)	0.42 (1.29)	0.41 (1.05)	0.51 (1.40)	0.51 (1.25)	0.48 (1.82)	0.47 (1.28)	0.01
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 1.00]	0.01 (1.25)	0.48 (1.82)	0.47 (1.28)	0.00
Number of lipid tests ordered	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 (1.82)	0.00 (1.28)	0.00
mean (sd)	1.09 (1.05)	1.09 (1.00)	0.98 (1.50)	0.97 (1.33)	1.13 (0.92)	1.14 (0.90)	1.07 (1.16)	1.07 (1.08)	0.00
median [IQR]	1.00 [0.00, 2.00]	1.00 [0.00, 2.00]	1.00 [0.00, 1.00]	1.00 [0.00, 1.00]	1.00 [1.00, 2.00]	1.00 [1.00, 2.00]	1.00 (1.16)	1.00 (1.08)	0.00
Number of creatinine tests ordered	1.00 [0.00, 2.00]	1.00 [0.00, 2.00]	1.00 [0.00, 1.00]	1.00 [0.00, 1.00]	1.00 [1.00, 2.00]	1.00 [1.00, 2.00]	1.00 (1.10)	1.00 (1.00)	0.00
mean (sd)	0.06 (0.37)	0.06 (0.33)	0.06 (0.39)	0.06 (0.33)	0.10 (0.43)	0.10 (0.41)	0.08 (0.40)	0.08 (0.37)	0.00
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 (0.40)	0.00 (0.37)	0.00
Number of BUN tests ordered	(,,	(,,	(,)	(,,	(,)	(,,		(/	
mean (sd)	0.03 (0.29)	0.04 (0.27)	0.03 (0.29)	0.04 (0.28)	0.06 (0.34)	0.06 (0.33)	0.04 (0.31)	0.05 (0.30)	-0.03
median [IQR]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 (0.31)	0.00 (0.30)	0.00
Number of tests for microalbuminuria							,	(,	
mean (sd)	0.71 (1.13)	0.72 (1.12)	0.53 (0.97)	0.53 (0.98)	0.48 (0.77)	0.48 (0.75)	0.55 (0.93)	0.55 (0.92)	0.00
median [IQR]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 [0.00, 1.00]	0.00 (0.93)	0.00 (0.92)	0.00
Total N distinct ICD9/ICD10 diagnoses at the 3rd	• • • •	•		•		• • •	, -,	. ,	
digit level									
mean (sd)	3.44 (5.93)	3.43 (5.80)	1.11 (3.31)	1.08 (3.22)	4.03 (6.95)	4.01 (6.97)	2.96 (5.78)	2.94 (5.74)	0.00
median [IQR]	0.00 [0.00, 5.00]	0.00 [0.00, 5.00]	0.00 [0.00, 0.00]	0.00 [0.00, 0.00]	0.00 [0.00, 6.00]	0.00 [0.00, 6.00]	0.00 (5.78)	0.00 (5.74)	0.00
Use of thiazide; n (%)	2,083 (10.0%)	2,098 (10.1%)	2,947 (10.1%)	2,950 (10.1%)	5,096 (12.4%)	4,979 (12.1%)	10,126 (11.1%)	10,027 (11.0%)	0.00
Use of beta blockers; n (%)	7,279 (35.0%)	7,224 (34.8%)	10,647 (36.5%)	10,502 (36.0%)	19,033 (46.3%)	18,957 (46.1%)	36,959 (40.6%)	36,683 (40.3%)	0.01
Use of calcium channel blockers; n (%)	5,503 (26.5%)	5,572 (26.8%)	8,041 (27.6%)	7,927 (27.2%)	13,451 (32.7%)	13,548 (32.9%)	26,995 (29.6%)	27,047 (29.7%)	0.00