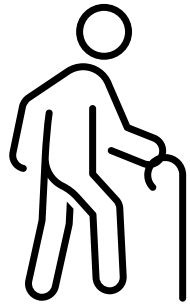


Trends in Second Line Diabetes Medication Prescribing in Older Adults from 2018 to 2020

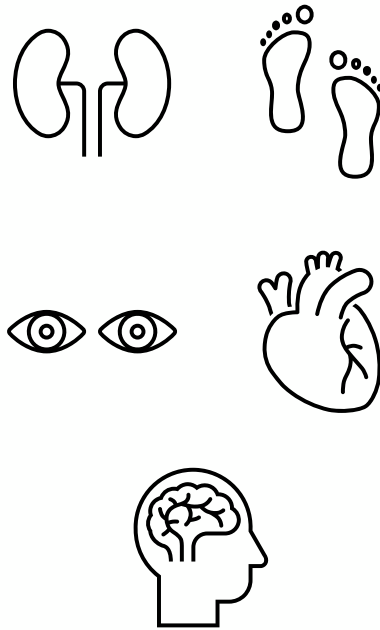
Geisinger

Mia Lussier
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and Outcomes

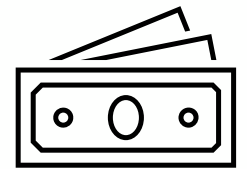
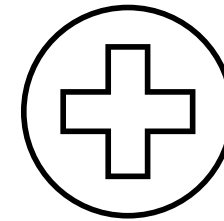
Diabetes in Older Adults



~ 30%
prevalence

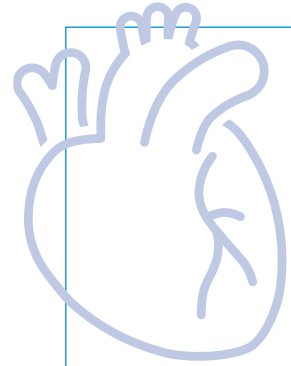


Microvascular &
Macrovascular
complications

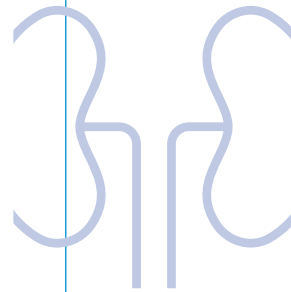


Health care
utilization and
spending

Medication Therapy & Complications

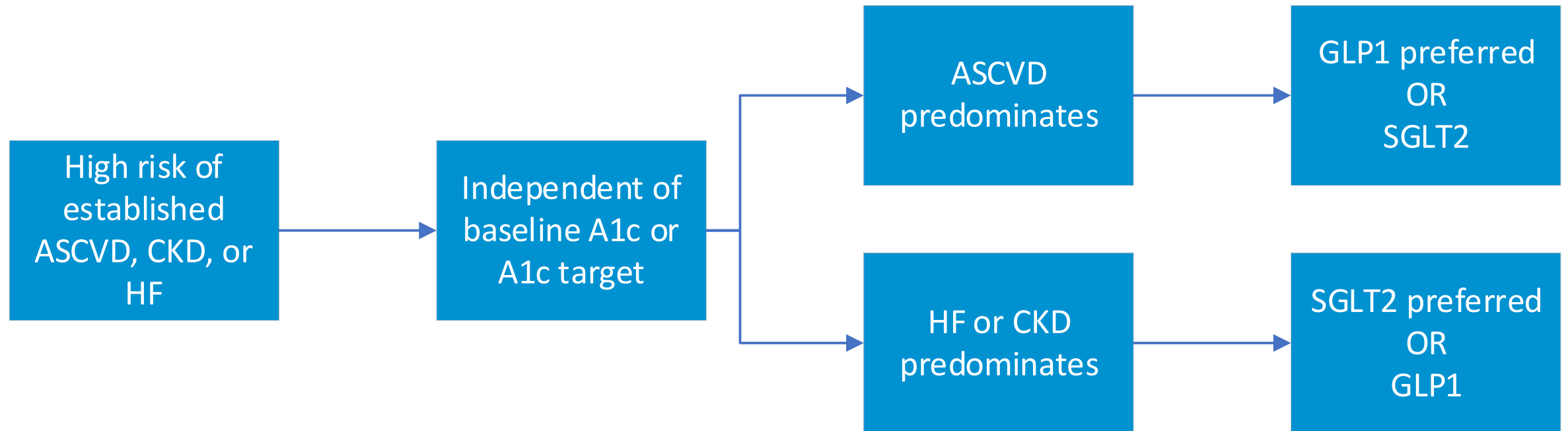


**GLP1
Agonists**



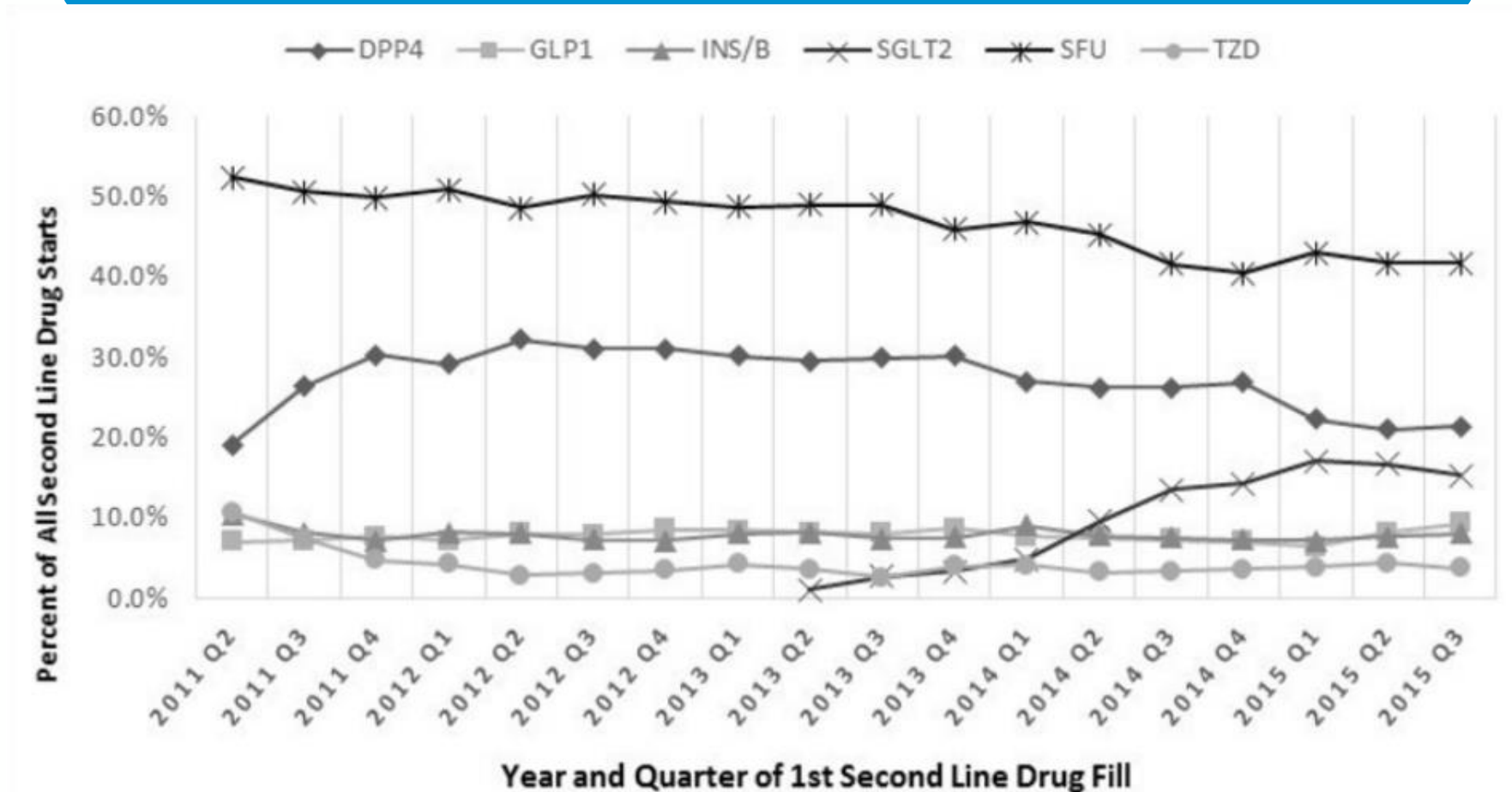
**SGLT2
Inhibitors**

American Diabetes Association Guidelines



Prior Studies

Correlates of Second-Line Diabetes Medication Selection in the USA



Prior Studies

Initiating Second Line Antidiabetic Medication Among Older Adults with Type 2 Diabetes on Metformin

Table 4 Patient Characteristics by Initial Second-Line Antidiabetic Medication Class

Characteristic ^a	Total N (%)	SFU N (%)	BI N (%)	Other ^b N (%)
Total	84,720 (100)	45,734 (54)	12,165 (14)	26,821 (32)
Fill Year				
2013	10,112 (12)	6,033 (13)	1,289 (11)	2,790 (10)
2014	11,766 (14)	6,585 (14)	1,653 (14)	3,528 (13)
2015	11,046 (13)	6,038 (13)	1,379 (11)	3,629 (14)
2016	27,639 (33)	14,907 (33)	4,537 (37)	8,195 (31)
2017	24,157 (28)	12,171 (27)	3,307 (27)	8,679 (32)

My Study

Study Design

Cross Sectional Design

- Data collection at time of second-line prescription

2018-2020

- Electronic health record
- Geisinger

Geisinger

**"Make my hospital right, make it the best."
- Abigail Geisinger (1827-1921)**

- Integrated Health Network
- Serving more than 3 million residents throughout 45 counties in central and northeastern Pennsylvania
- Approximately 24,000 employees, including 1,600 employed physicians
- 9 hospital campuses
- Two research centers
- School of Medicine
- Health Plan serving nearly 600,000 members
- Over 400 Pharmacists



Inclusion/Exclusion

Inclusion Criteria

- Patients 65 years of age or older
- Diagnosis of diabetes
- At least one encounter during study period

Exclusion Criteria

- Under hospice care at any time during the study period

Population Determination

Pharm Class ID to identify diabetes medications

Pharm Subclass ID to identify metformin prescription

Date earliest metformin prescription issued = index date

- Delete all other metformin orders

Calculate days since metformin by med order date – index date

- If days since ≤ 0 then exclude
- If days since > 0 then keep minimum days since per MRN

Population Determination

If 1 medication - Keep

If >1 medication

- If >2 medications - remove patient
- If 2 medications continue to investigate

If 2 medications

- If basal/bolus insulin – remove patient
- If same class – keep 1 order
- Other wise chart review

Chart Review

- Not true second-line medication – remove
- 2 medications prescribed second-line
 - If sulfonylurea – keep
 - If GLP1 or SGLT2 – keep

Statistical Analysis

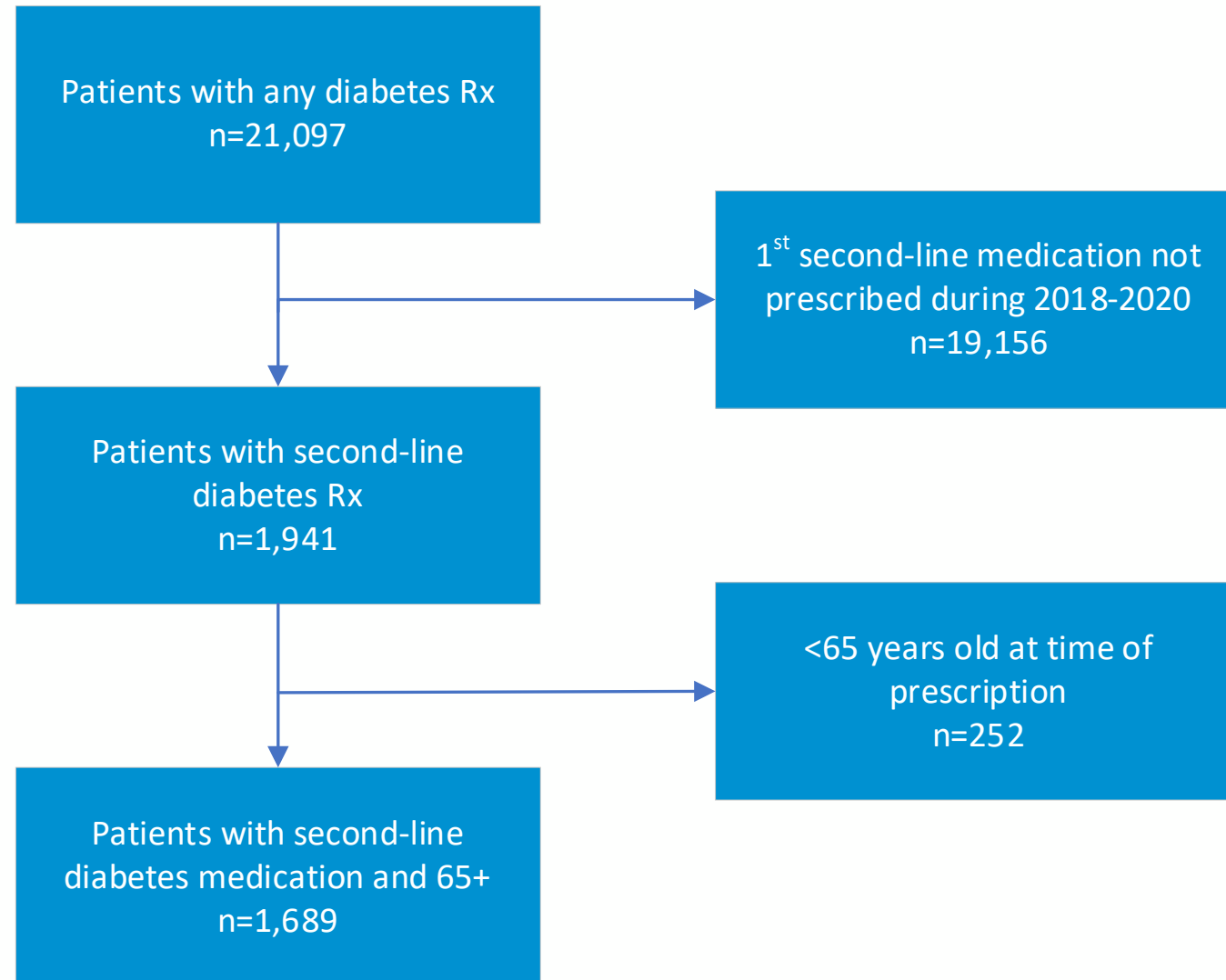
Descriptive Statistics

Inferential Statistics

- Cochran-Armitage Trend Test

SAS Enterprise Guide 8.3

Population

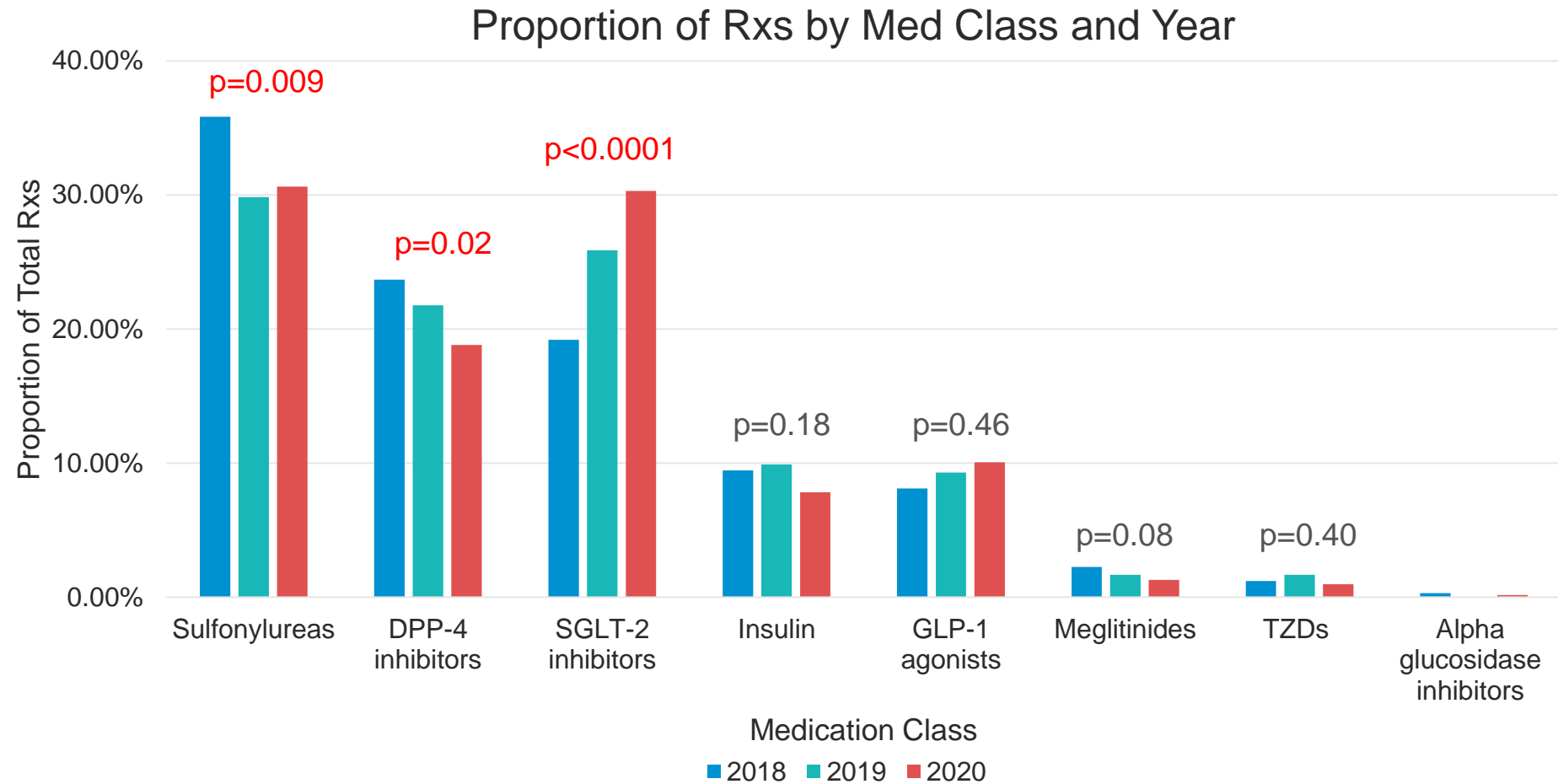


Demographics

Variable (n,%)	Overall
Age	
65-74	1189 (61.3%)
75-84	410 (21.1%)
85+	90 (4.6%)
Sex	
Female	823 (48.7%)
Male	866 (51.3%)
Race n(%)	
White	1603 (94.9%)
Asian	34 (1.8%)
Black	51 (2.6%)
Other	13 (0.7%)

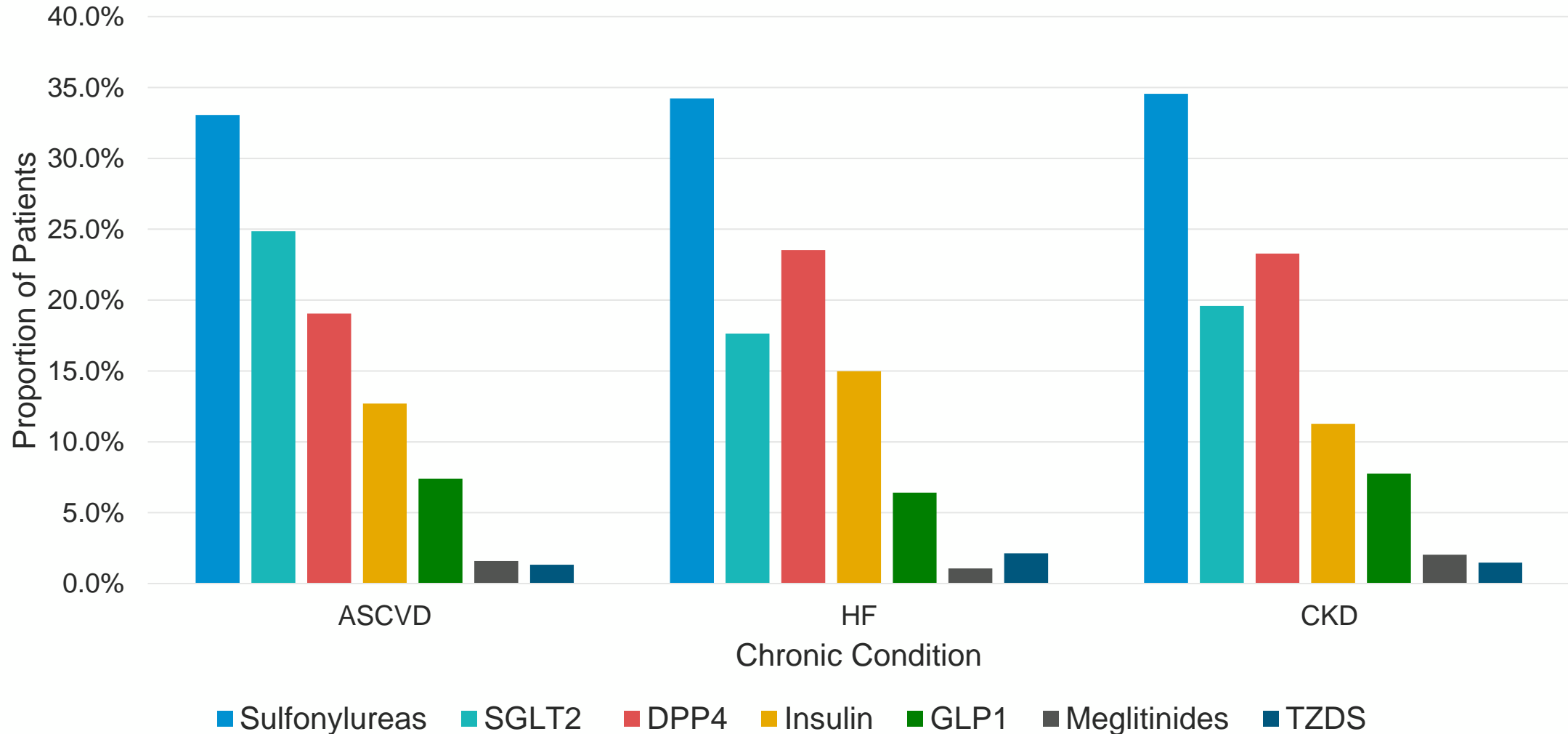
Variable (n, %)	Overall
Clinician	
Physician	1147 (67.9%)
Advanced Practitioner	356 (21.1%)
Pharmacist	186 (11.0%)
Practice Type	
Primary Care	1317 (78.0%)
Endocrinology	45 (2.7%)
Geriatrics	24 (1.4%)
Other	303 (18.0%)
Year	
2018	520 (30.8%)
2019	574 (34.0%)
2020	595 (35.2%)
Comorbidities	
ASCVD	424 (25%)
CHF	203 (18%)
CKD	568 (19%)

Medication Use by Year



Medication Use by Disease State

Medication Use in Older Adults with Chronic Conditions



Discussion

Despite hypoglycemia risk, sulfonylureas remain the most prescribed second-line diabetes medication

SGLT2s are used more commonly than GLP1s in patients with compelling indications

Additional information is needed to better understand this gap in care

Next steps

Determine factors associated with prescribing practices of SGLT2s and GLP1s

Understand factors providers consider when prescribing 2nd line diabetes medications

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Study Team

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- Michael Gionfriddo, PharmD, PhD
- Jove Graham, PhD
- Thomas Morland, MD
- Jonathan Brady, PharmD

HCSRN

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Questions

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