Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.
**eTable 1. ICD-9 and ICD-10 Codes Used for Defining Hypoglycemia-Associated ED Visits or Hospitalizations**

| Hypoglycemia                  | ICD-9 codes         | ICD-10 codes                  |
|-------------------------------|---------------------|-------------------------------|
| 251.0, 251.1, 251.2, 270.3, 962.3 or 250.8x (and not 259.8, 272.7, 681.xx, 682.xx, 686.9x, 707.1-707.9, 709.3, 730.0-730.2, 731.8) | E08.641, E08.649, E09.641, E09.649, E10.641, E13.649, E13.641, E16.2, T38.3X1A, T38.3X1D, T38.3X1S, T38.3X2A, T38.3X2D, T38.3X2S, T38.3X3A, T38.3X3D, T38.3X3S, T38.3X4A, T38.3X4D, T38.3X4S, T38.3X5A, T38.3X5D, T38.3X5S |
**eTable 2.** Characteristics of Individuals With 1 vs Multiple Episodes of Hypoglycemia-Associated ED Visits or Hospitalizations

| Characteristic                  | One Event N=58,579 | Multiple Events N=17,702 |
|--------------------------------|--------------------|--------------------------|
| Age, mean (SD)                 | 76.8 (7.73)        | 75.7 (7.46)              |
| Sex, Male                      | 21,520 (36.7%)     | 5,821 (32.9%)            |
| **Race**                       |                    |                          |
| White                          | 41,054 (70.1%)     | 10,869 (61.4%)           |
| Black                          | 11,423 (19.5%)     | 5,118 (28.9%)            |
| Hispanic                       | 2,650 (4.5%)       | 805 (4.5%)               |
| Other                          | 3,452 (5.9%)       | 910 (5.1%)               |
| **Diabetes medications**       |                    |                          |
| Metformin                      | 20,224 (34.5%)     | 5,414 (30.6%)            |
| TZD                            | 6,801 (11.6%)      | 2,396 (13.5%)            |
| DPP-4i                         | 5,294 (9.0%)       | 1,272 (7.2%)             |
| GLP-1RA                        | 854 (1.5%)         | 190 (1.1%)               |
| SGLT2 inhibitor                | 232 (0.4%)         | 37 (0.2%)                |
| **Baseline Regimen**           |                    |                          |
| SU Only                        | 22,222 (37.9%)     | 4,544 (25.7%)            |
| Insulin Only                   | 28,658 (48.9%)     | 10,587 (59.8%)           |
| SU and Insulin                 | 7,699 (13.1%)      | 2,571 (14.5%)            |
| Deintensification (outcome)    | 21,503 (36.7%)     | 4,504 (25.4%)            |

Abbreviations: TZD = thiazolidinedione; DPP-4i=dipeptidyl peptidase-4 inhibitor; GLP-1RA=glucagon-like peptide-1 receptor agonist; SGLT2i=sodium/glucose cotransporter-2; SU=sulfonylurea.
**eTable 3. Specialty of Prescribers of Sulfonylurea and/or Insulin Therapy**

| Specialty            | Frequency | Percent |
|----------------------|-----------|---------|
| Endocrinologist      | 10,702    | 10.07   |
| Other Specialty      | 12,666    | 11.91   |
| PCP Only             | 82,936    | 78.02   |

Definitions: Endocrinologist = any baseline fill from an Endocrinologist prescriber (even if there was also a fill from another prescriber type); Other specialist = no baseline fill from an Endocrinologist or Primary Care Physician; PCP only = all baseline fills from Primary Care Physician (PCP).
**eTable 4. Baseline Regimen by Prescriber Specialty**

| Baseline Regimen | Endocrinologist N=10,702 | Other Specialty N=12,666 | PCP Only N=82,936 |
|------------------|--------------------------|--------------------------|------------------|
| SU Only          | 915 (8.5%)               | 4,107 (32.4%)            | 27,057 (32.6%)   |
| Insulin Only     | 8,487 (79.3%)            | 6,600 (52.1%)            | 45,267 (54.6%)   |
| SU and Insulin   | 1,300 (12.1%)            | 1,959 (15.5%)            | 10,612 (12.8%)   |

Abbreviations: SU=sulfonylurea; PCP=Primary Care Physician
**eTable 5. Deintensification of Baseline Regimen by Prescriber Specialty**

| Prescriber    | Sulfonylurea Use Only | Insulin Use Only | Sulfonylurea and Insulin Use |
|---------------|-----------------------|------------------|------------------------------|
| Endocrinologist | 399 (43.6)           | 2,159 (25.4)    | 679 (52.2)                   |
| Other Specialty | 1,803 (43.9)         | 1,863 (28.2)    | 1,034 (52.8)                |
| PCP Only      | 11,993 (44.3)        | 10,475 (23.1)   | 4,964 (46.8)                |

Abbreviations: PCP=Primary Care Physician
**Table 6. Sensitivity Analysis of Outpatient Cataract Surgery Cohort**

| Characteristic | SU Only   | Insulin Only | SU+Insulin |
|----------------|-----------|--------------|------------|
|                | value     | OR (95% CI)  | N          | % Deinten | OR (95% CI) | N          | % Deinten | OR (95% CI) |
| Overall        | 126,294   | 1.13 (1.09-1.17) | 89,277 | 17.5 | 1.14 (1.10-1.19) | 24,330 | 28.2 |
| Event Number   |           |              |           |          |            |           |          |            |
| First          | 81,045    | 1.12 (1.09-1.16) | 57,134 | 18.2 | 1.09 (1.05-1.13) | 15,115 | 28.4 | 1.03 (0.98-1.10) |
| Subsequent     | 45,249    | 0.96 (0.93-0.99) | 32,143 | 16.3 | 0.93 (0.90-0.96) | 9,215 | 27.8 |
| Age            |           |              |           |          |            |           |          |            |
| 65-75          | 71,694    | 1.12 (1.09-1.16) | 61,271 | 17.9 | 1.09 (1.05-1.13) | 16,310 | 28.6 | 1.06 (0.99-1.12) |
| >75            | 54,600    | 0.96 (0.93-0.99) | 28,006 | 16.7 | 0.93 (0.90-0.96) | 8,020 | 27.5 |
| Sex            |           |              |           |          |            |           |          |            |
| Female         | 71,550    | 1.12 (1.09-1.16) | 52,973 | 17.1 | 1.09 (1.05-1.13) | 13,676 | 27.9 | 0.97 (0.92-1.03) |
| Male           | 54,744    | 0.96 (0.93-0.99) | 36,304 | 18.2 | 0.93 (0.90-0.96) | 10,654 | 28.5 |
| Race           |           |              |           |          |            |           |          |            |
| Asian          | 4,850     | 1.12 (1.09-1.16) | 1,665 | 16.2 | 0.91 (0.80-1.04) | 599 | 29.4 | 1.08 (0.90-1.29) |
| Black          | 12,639    | 1.07 (1.01-1.13) | 12,122 | 17.7 | 1.01 (0.96-1.06) | 2,674 | 29.5 | 1.09 (1.00-1.19) |
| Hispanic       | 4,360     | 1.12 (1.09-1.16) | 3,358 | 16.7 | 0.94 (0.86-1.04) | 997 | 31.0 | 1.17 (1.02-1.34) |
| NAmericans     | 715       | 1.12 (1.09-1.16) | 808 | 15.5 | 0.86 (0.71-1.04) | 208 | 27.9 | 1.00 (0.74-1.36) |
| Active | Count | % | RR (95% CI) | Count | % | RR (95% CI) | Count | % | RR (95% CI) |
|-------|-------|---|------------|-------|---|------------|-------|---|------------|
| Other | 2,758 | 14.5 | 1.14 (1.03-1.27) | 1,655 | 19.5 | 1.13 (1.00-1.28) | 447 | 31.5 | 1.20 (0.98-1.47) |
| Unknown | 578 | 11.8 | 0.90 (0.70-1.16) | 444 | 15.5 | 0.86 (0.67-1.12) | 130 | 22.3 | 0.75 (0.49-1.13) |
| White | 100,394 | 12.9 | | 69,225 | 17.6 | | 19,275 | 27.8 | |
eFigure 1. Flow Diagram of Study Population

- Hypoglycemia-related ED visit/hospitalization, 2007-2017, N=175,130 episodes
  - Excluded: Did not have 6 months of continuous enrollment preceding event, N=20,151

- At least 6 months of continuous enrollment preceding event, N=154,979 episodes
  - Excluded (lack of 100 days follow-up): No longer enrolled in Medicare Parts A,B,D, n=5,909 Mortality, N=15,696

- At least 100 days follow-up, N=133,374 episodes

- ≥ 1 prescriptions for SU and/or insulin in 100 days preceding hypoglycemia, N=106,293 episodes (76,278 unique beneficiaries)
  - Excluded: No prescription for SU or insulin in 100 days preceding hypoglycemia, N=27,080