



Impact of Pharmacist-Led Insulin Pump Service in Primary Care

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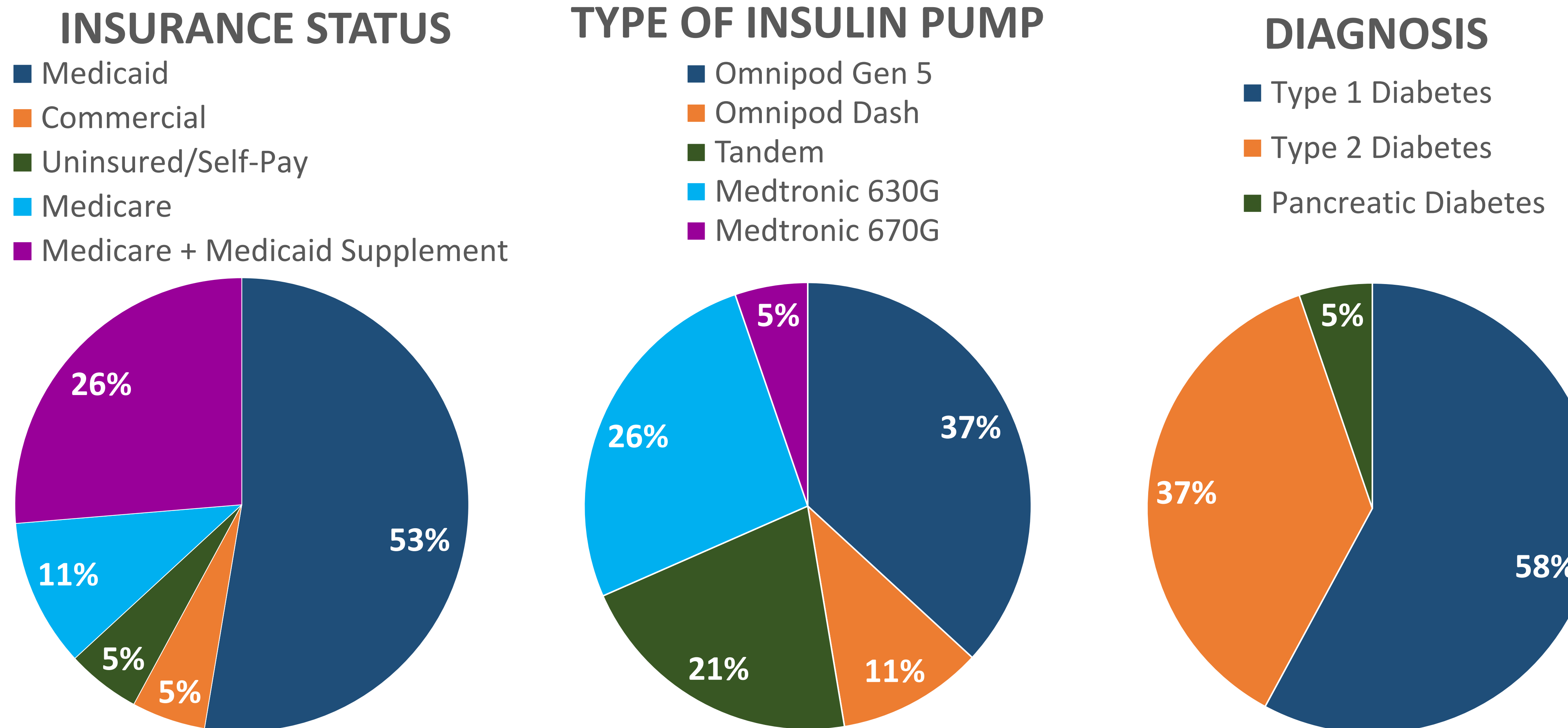
Background

- The 2024 American Diabetes Association Standards of Care recommends offering insulin pump therapy to people with diabetes on multiple daily insulin injections.
- A shortage of endocrinologists in non-urban areas, along with socioeconomic and racial disparities, limits access to diabetes technology.
- To address these barriers, primary care practitioners partnered with a diabetes care and education specialist pharmacist to initiate insulin pump therapy and provide follow-up care for adults with diabetes on intensive insulin therapy at two SIHF Healthcare community health centers in southern Illinois.

Objective

- Assess glycemic outcomes before and after starting insulin pump therapy under pharmacist care.

Results



N = 19	A1C (%) Change	P value
Initiation to most recent	-1.01	0.022
Initiation to 3 months	-0.69	0.015
Initiation to 6 months	-0.54	0.13
3 months to 6 months	+0.15	0.59

N = 19	Blood Glucose (mg/dL) Change	P value
Initiation to most recent	-40.2	0.034
Initiation to 3 months	-25.9	0.14
Initiation to 6 months	-19.5	0.33
3 months to 6 months	+6.4	0.48

Results

- Study population consisted of 19 patients; mean age 53 years, female (63.2%) and white (73.7%); 5 (26.3%) Black, mean baseline A1C 9.07%.
- Insulin requirements significantly decreased from before pump initiation to most recent total daily dose (mean change -23.1 units, $p=0.008$).
- Average time in range (TIR) for users of continuous glucose monitoring was 64.8% ($n=11$) after insulin pump initiation.
- Patients experienced an average of 2 to 4 hypoglycemic events per month on pump therapy.

Limitations

- Small study size, 2 health centers.
- Missing data accounted for by LOCF method of analysis and patient-reported data.
- Data lacking for hypoglycemia events prior to pump therapy and due to limited access to hospital records.

Methods

- Research protocol approved under exempt review procedure by the Southern Illinois University Edwardsville Institutional Review Board.
- Study design was a retrospective chart review of electronic medical records.
- Included patients aged 18-89 with a diabetes diagnosis receiving insulin pump therapy through primary care pharmacist initiation and follow-up, including dose adjustments.
- Descriptive statistical analysis performed for demographics, hypoglycemic events, and time in range glucose values. A1C, glucose levels, and insulin requirements analyzed using student t-tests with last observation carried forward (LOCF) to account for missing data. Alpha level set *a priori* at 0.05. Statistical analyses were performed using Microsoft Excel.

Conclusions

- Pharmacist-led insulin pump services appear to improve glycemic outcomes and reduce insulin requirements in adults with diabetes requiring intensive insulin therapy.
- Advanced practice pharmacists specializing in diabetes care in primary care settings can play a pivotal role in overcoming disparities by increasing patient access to diabetes technology.
- Future insulin pump research should focus on long-term efficacy and safety outcomes, cost-effectiveness, behavioral support, patient satisfaction/quality of life, and equitable access.