Delineating the type 2 diabetes population in the Netherlands using an all-payer claims database: specialist care, medication utilization and expenditures 2016–2018

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Context & Methods

Worldwide, the prevalence of type 2 diabetes is quickly rising [1]. Almost all diabetes patients use specialized care and medication [2]. However, insight into what medical specialties and medication are used remains limited as prior studies often focus on samples or subgroups of the entire population (e.g. determined by a single insurer or provider). Thus, the use of data representing a heterogeneous, nationwide type 2 diabetes populations is rare [2,3].

We used all-payer claims data covering 99.9% of the Dutch population to identify the entire Dutch type 2 diabetes population (n=900,522 in 2018). We aimed to describe the healthcare utilization and expenditures related to medical specialist care and medication of this complete population in detail.

Specialist care and medication use patterns of patients with type 2 diabetes are heterogeneous, indicating diverse care needs and the potential value of more tailored, patient-centered care

Results – Specialist care

Specialist care utilization was diverse: different medical specialties were visited by a considerable part of the type 2 diabetes population (Table 1). The five most used medical specialisms were ophthalmology, internal medicine, cardiology, surgery, and neurology. Total expenditures on specialist care were €2,498 million in 2018, i.e. 10.6% of national expenditures on specialist care.

Table 1 Specialist care use and expenditures in 2018 in the top-5 specialisms

	Utilization (number of patients), n (%)	Total Expenditures (million €), n (%)	Mean expenditures per treated patient (€)	Median expenditures per treated patient (€)
Ophthalmology	241,981 (26.9)	141 (5.6)	581	160
Internal medicine	209,197 (23.2)	439 (17.6)	2,099	647
Cardiology	190,200 (21.1)	391 (15.6)	2,055	488
Surgery	131,292 (14.6)	366 (14.6)	2,786	572
Neurology	96,310 (10.7)	129 (5.2)	1,344	558

Moreover, almost two-thirds of specialist care users visited two or more different medical specialties per year (Fig. 1).

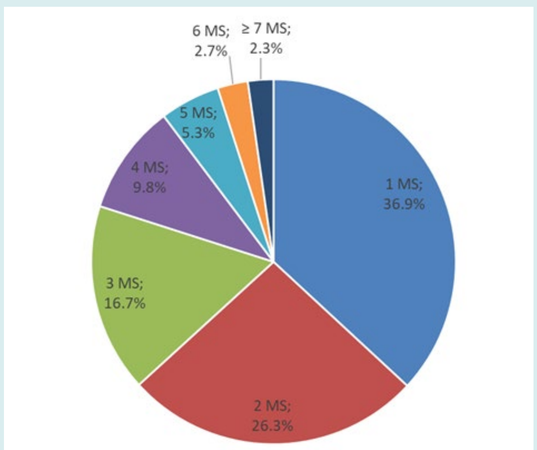

Fig. 1 Number of medical specialties (MS) used by type 2 diabetes patients who used one or more MS (n = 641,515) in 2018

Results - Medication

In total, 81.8% of patients used glucose lowering drugs (GLD) and 97.8% of patients used other medication. The large majority of patients with type 2 diabetes (80.5%) used both GLD and other medication. Only 0.9% of the Dutch type 2 diabetes population did not use any type of medication (Fig. 2).

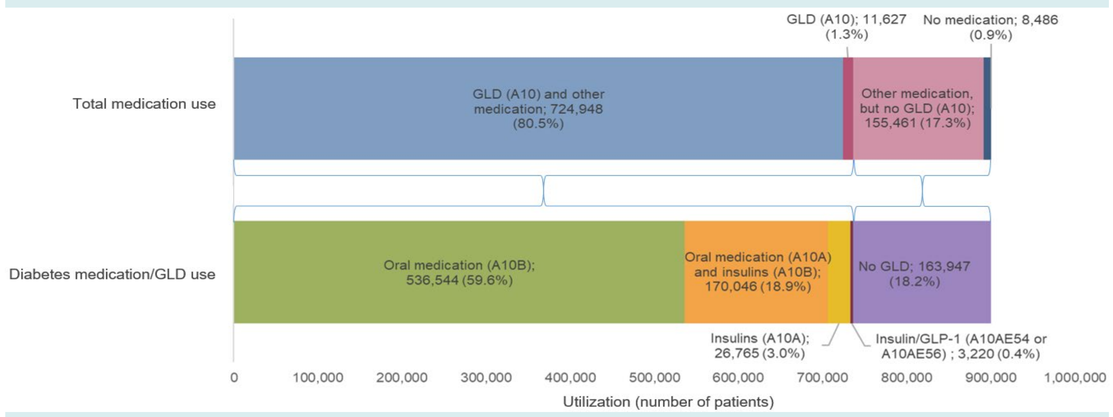

Fig. 2 Total medication and diabetes medication utilization in 2018

Total medication expenditures for the type 2 diabetes population were €931 million in 2018, including €238 million (i.e. 25.6%) for diabetes medication. Use of other, non-diabetes medication substantially increased mean expenditures per treated patient (Table 2).

Table 2 Mean and median per treated patient medication expenditures in 2018

	Mean expenditures per treated patient (SD)	Median per treated patient expenditures (P5; P95)
GLD (A10) and other medication	1,140±2,383	701 (112; 3,175)
GLD (A10)	162±282	53 (14; 692)
Other medication, but no GLD (A10)	658±1,899	321 (37; 2,003)

For both specialist care and medication, mean expenditures per treated patient were higher than median expenditures (Table 1, Table 2), indicating a skewed distribution of spending. Thus, a small part of the population is responsible for a large share of the expenditures.

Conclusion

- Specialist care use of the Dutch type 2 diabetes population is heterogeneous and accounts for approximately 11% of national specialist care expenditures. Almost all type 2 diabetes patients use some type of medication (99.1%) where non-diabetes medication accounts for the largest share of expenditures.
- A small part of the type 2 diabetes population is responsible for a large share of total expenditures.

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