Healthcare Resource Use and Mortality After Diabetic Ketoacidosis: Insights from Linked Primary- and Secondary-Care Data in the UK

RWD92

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Background

- **Diabetic ketoacidosis (DKA)** is a life-threatening acute complication of diabetes, often requiring emergency admission and intensive care.
- **DKA places a substantial burden on healthcare systems** due to high admission rates, prolonged hospital stays, and risk of readmission.
- Despite this impact, there is limited real-world evidence describing the burden of DKA in routine clinical practice. Quantifying this burden is essential to inform healthcare planning, resource allocation, and strategies to reduce avoidable admissions.

Methods

- **Study design:** Retrospective observational cohort study; index 1999–2018 with follow-up to 2022. DKA outcomes were assessed separately for each calendar year (2019–2022).
- **Data sources:** Clinical Practice Research Datalink (CPRD) linked to Hospital Episode Statistics (HES), and Office for National Statistics covering adults in England.
- **Population:** Adults (≥18 years) with T1D (n=78,856) or T2D, (n=577,088) identified from diagnostic codes in CPRD who experienced ≥1 hospital admission for DKA between 2019-2022.
- **Outcomes:** Recurrent DKA within 12 months (≥2 admissions); 30-day all-cause readmission following DKA; length of hospital stay; 30-day mortality following DKA.

Results

- **Recurrent DKA (Fig 1):** Within 12 months of a DKA, 23.5% of people with T1D experienced a recurrence, compared to 8.6% of those with T2D.
- **30-day readmission (Fig 2):** 6.5% of people with T1D and 18.2% of those with T2D were readmitted (any cause) within 30 days of a DKA.
- **30-day mortality (Fig 3):** Mortality following DKA was 4.6 times higher in T2D (14.4%) than in T1D (3.1%).
- **Length of stay (Fig 4):** Hospital stays were consistently longer in T2D than T1D, with broad IQRs and occasional very prolonged admissions driving up the mean.

Fig 1. Recurrent DKA within 12 months (%)*

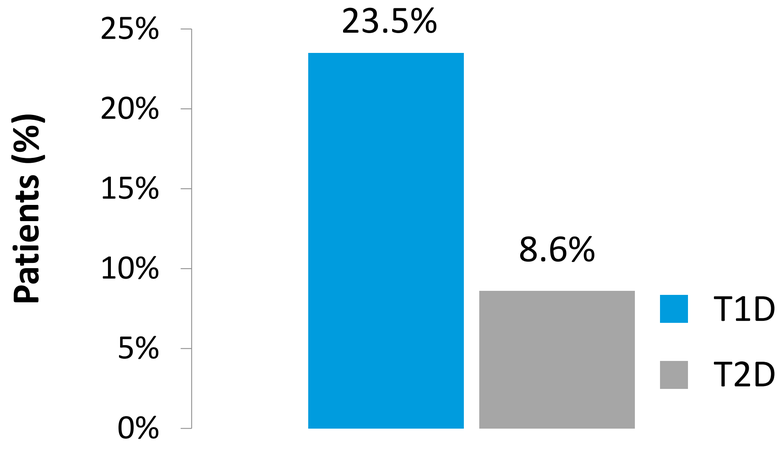


Fig 2. 30-day all-cause readmission after DKA (%)*

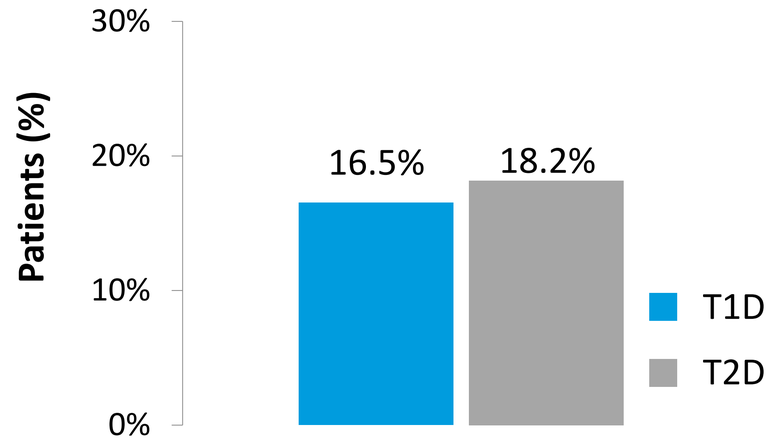


Fig 3. 30-day mortality after DKA (%)*

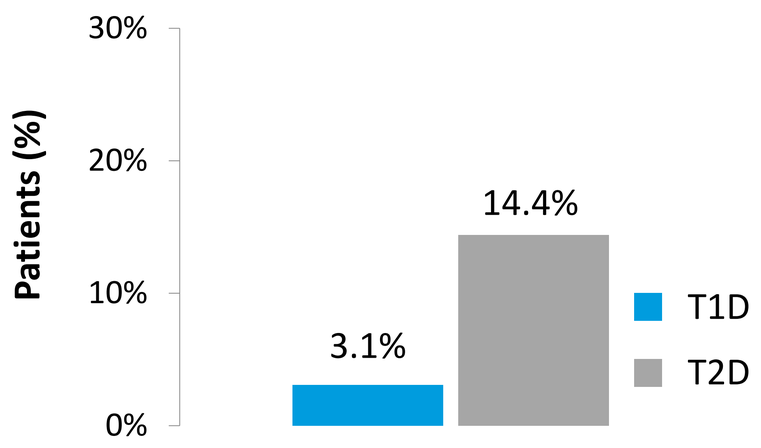
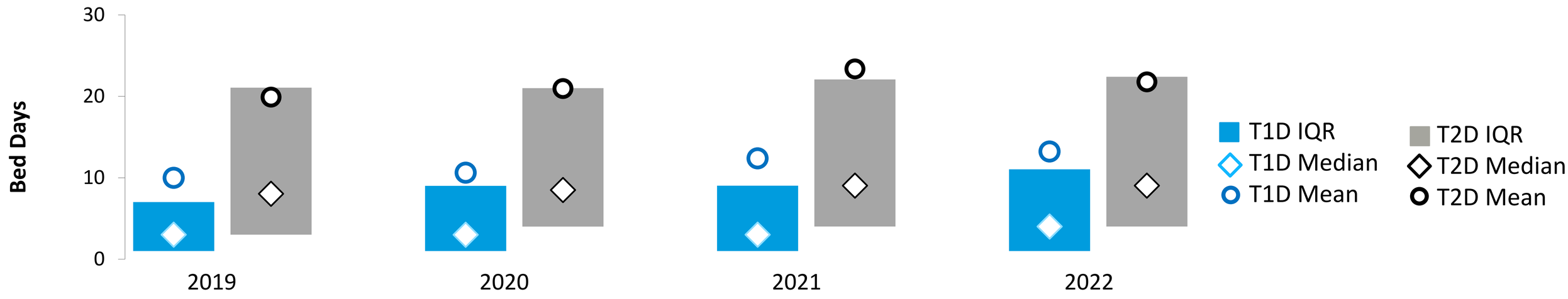


Fig 4. Length of stay for DKA events per patient per year – medians, means and interquartile ranges (IQRs)



Conclusions

- DKA is a potent marker of clinical vulnerability, with high risk of mortality, recurrence, and readmission.
- Recurrent DKA is particularly common in T1D, underscoring the need for sustained follow-up and preventive care.
- In T2D, high mortality and longer, more variable hospital stays underline the importance of preventive strategies.
- Findings highlight the need for tailored discharge pathways and real-time monitoring strategies to reduce avoidable admissions and improve outcomes.

Abbreviations

DKA, Diabetic ketoacidosis; IQR, interquartile range; T1/2D, Type 1/2 diabetes.

References

*Among patients with ≥1 DKA event; values shown are means across 2019–2022.

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