**18-Year Incidence, Health Outcomes and Costs Associated With Diabetic Ketoacidosis At Diagnosis Of Type 1 Diabetes in Children in NSW, Australia**

**Aim:** Diabetic ketoacidosis (DKA) is a life-threatening complication of type 1 diabetes (T1D). We determined the incidence, trends, cost and characteristics of children with and without DKA at T1D diagnosis and association with DKA readmissions.

**Methods:** Children aged <16 years with T1D and residing in New South Wales, Australia were identified from population-based hospital records (Admitted Patient Data Collection; APDC)for 2002-2019. Diagnoses of T1D and DKA were identified using ICD10 codes. Costs were determined using the ‘Australian Refined-Diagnosis Related Group’ code multiplied by the cost weight and National Efficient Price for the admission year. Associations were assessed using Chi-squared analyses and multivariate regression.

**Results:** 5,832 children with T1D were identified and 36% had DKA at diagnosis, increasing by 7 percentage points over 18 years. DKA at diagnosis was associated with age <2 years, lower socioeconomic status (SES) and rural/regional areas and with an increased risk of readmission(s) for DKA (OR: 1.35 (1.23, 1.49)). DKA doubled the costs/person, considering all available follow-up ($20,571 ($10,825, $37,845) vs $9,743 ($4,980, $18,287).

**Conclusion:** DKA at diagnosis of T1D is a common and expensive health issue in Australia and the rate appears to be worsening over time. Effective strategies are needed to improve health outcomes and reduce the economic burden.