

# **Glasgow Child and Young People Type 2 and Impaired Glucose Tolerance Clinic**

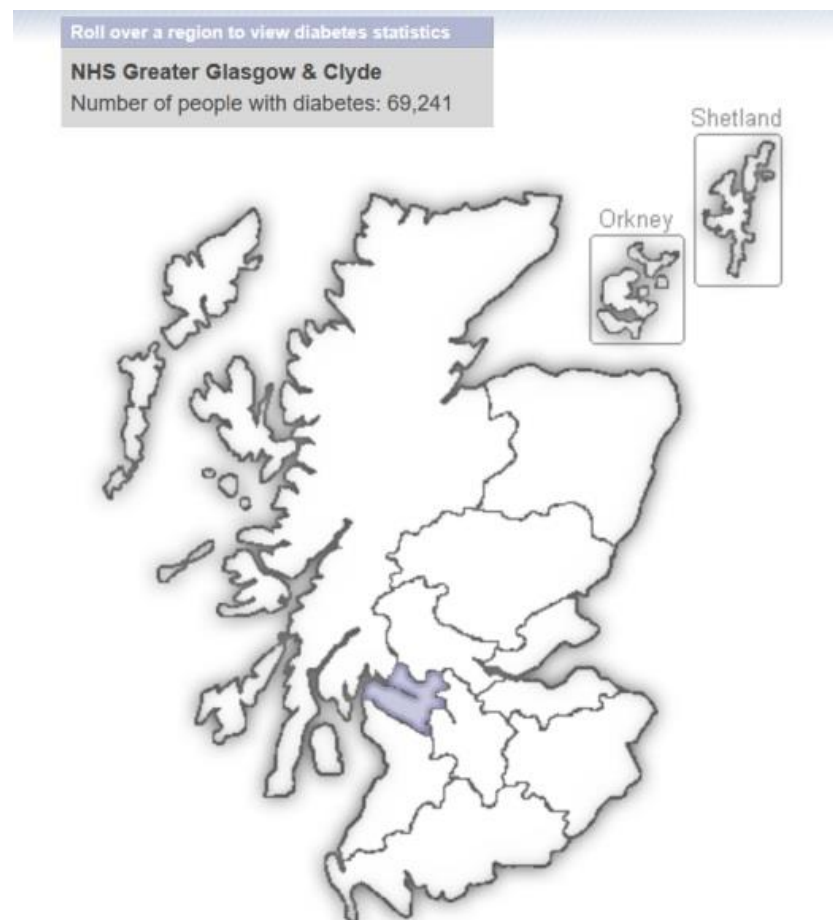
**Claire Cockburn**

**ST7 General Paediatric and Diabetes Registrar**

- 874 patients
- Type 1 812
- Type 2 11
- Impaired Glucose Metabolism 2
- Other 22
- Diabetes not confirmed 26
- Diabetes not defined 1

\*Data as per SCI Diabetes

- Scottish Care Information- Diabetes Collaborative (SCI\_DC)
- Electronic Patient Record
- NHS Scotland Patients with Diabetes
- Primary and Secondary Care
- Started 2002



- Benefits of Type 2 dedicated clinic highlighted in National Working Groups

## Our Concerns:

- Type 2 patients lost in 874 patient mainly Type 1 group
- Misdiagnosed as Type 1
- Management Type 1 focused
- Consider reducing or stop Insulin therapy- may be promoting weight gain
- Focus on other medication
- Need for emphasis on weight management
- Screening for co-morbidities

- Provide relevant resources for patients
- Shared learning and experience
- Transition and link to adults
- Peer support
- Psychology
- Dietitian input
- Potential for research as easily identified group
  
- Currently we run 6 clinics a month- 3 consultants lists

# **Type 2 diabetes mellitus in children and young people: A single UK paediatric diabetes centre experience**

**Audit Completed by  
Elina Joy, Medical Student  
Salma Ali, Endocrine GRID Trainee**

# Why this QIP?

- T2DM increasingly prevalent in children and young people (CYP), mainly linked to the rise in obesity
- T2DM associated with higher and earlier risk of developing complications
- Prompt diagnosis and management involving the MDT is crucial
- Largest paediatric diabetes service in UK
- No previous audit of the T2DM paediatric cohort
- Recent introduction of dedicated T2DM clinic in NHS GG&C in June 2023

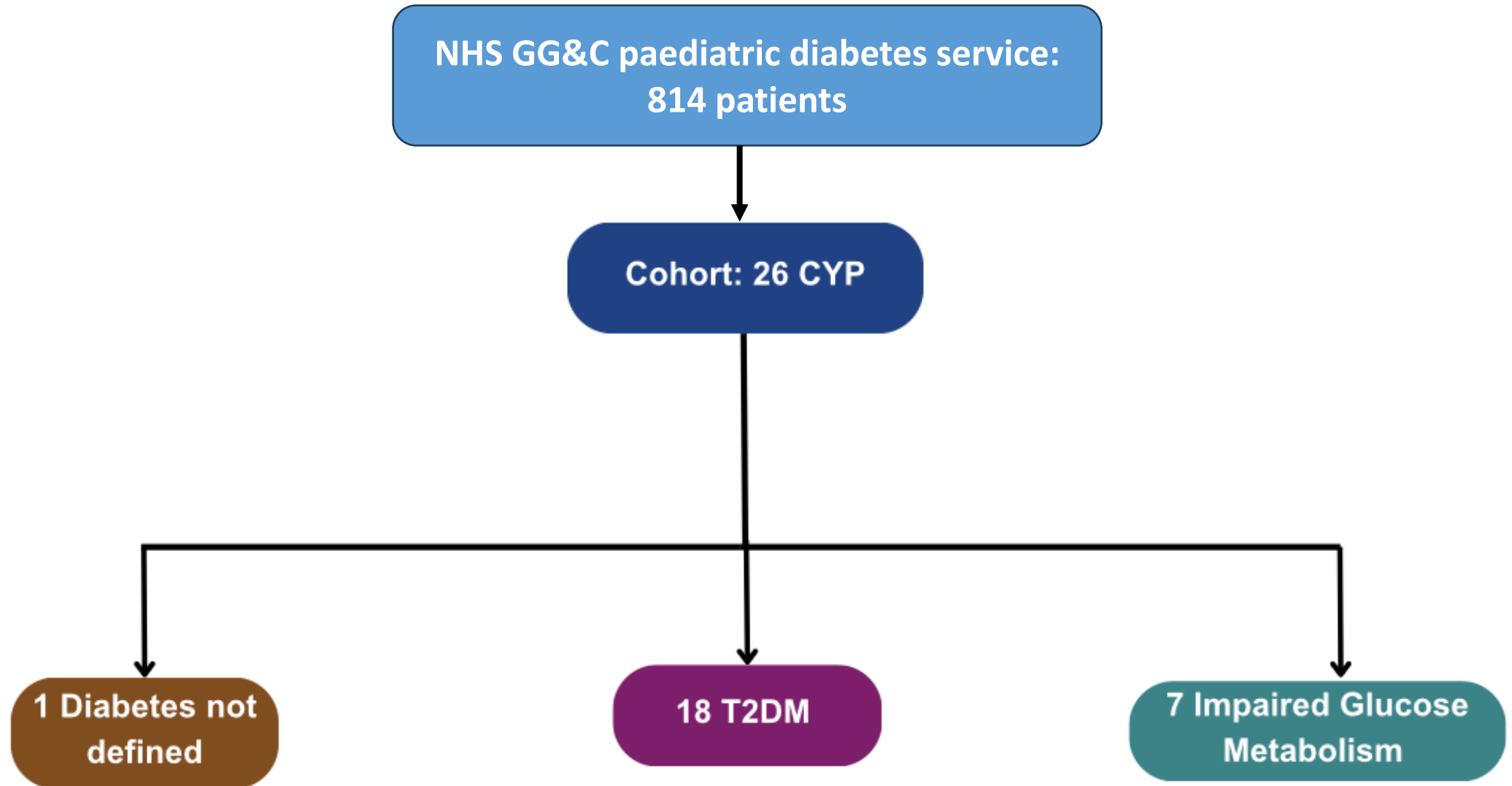
- To evaluate the current practice for T2DM management and monitoring of complications at RHC, Glasgow
- Retrospective review of electronic patient records (Clinical Portal, Trakcare, SCI Diabetes)

## **Inclusion criteria:**

- All CYP (aged  $\leq 18$  years) diagnosed with T2DM (or impaired glucose metabolism) between 2018 and 2023



- Route of referral
- Demographics
  - Age, Sex, Ethnicity, SIMD
- Clinical features at presentation
- **At diagnosis, 6 and 12 months**
  - BMI
  - HbA1c
  - Blood Pressure
- Investigations at diagnosis
- Complications
- Family history
- Management - pharmacologic therapy



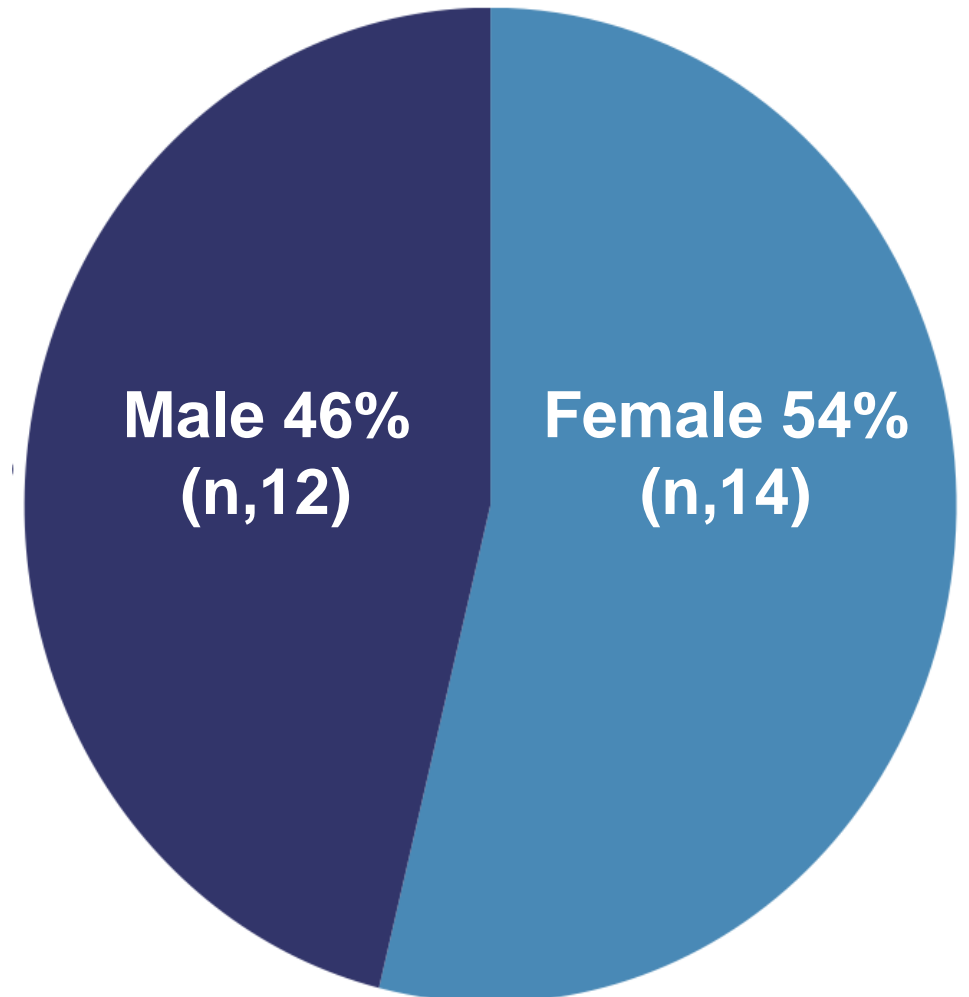
Age at diagnosis (y), median (range)

- 13.7 (9.6,15.7)

Duration of Diagnosis (y), median (range)

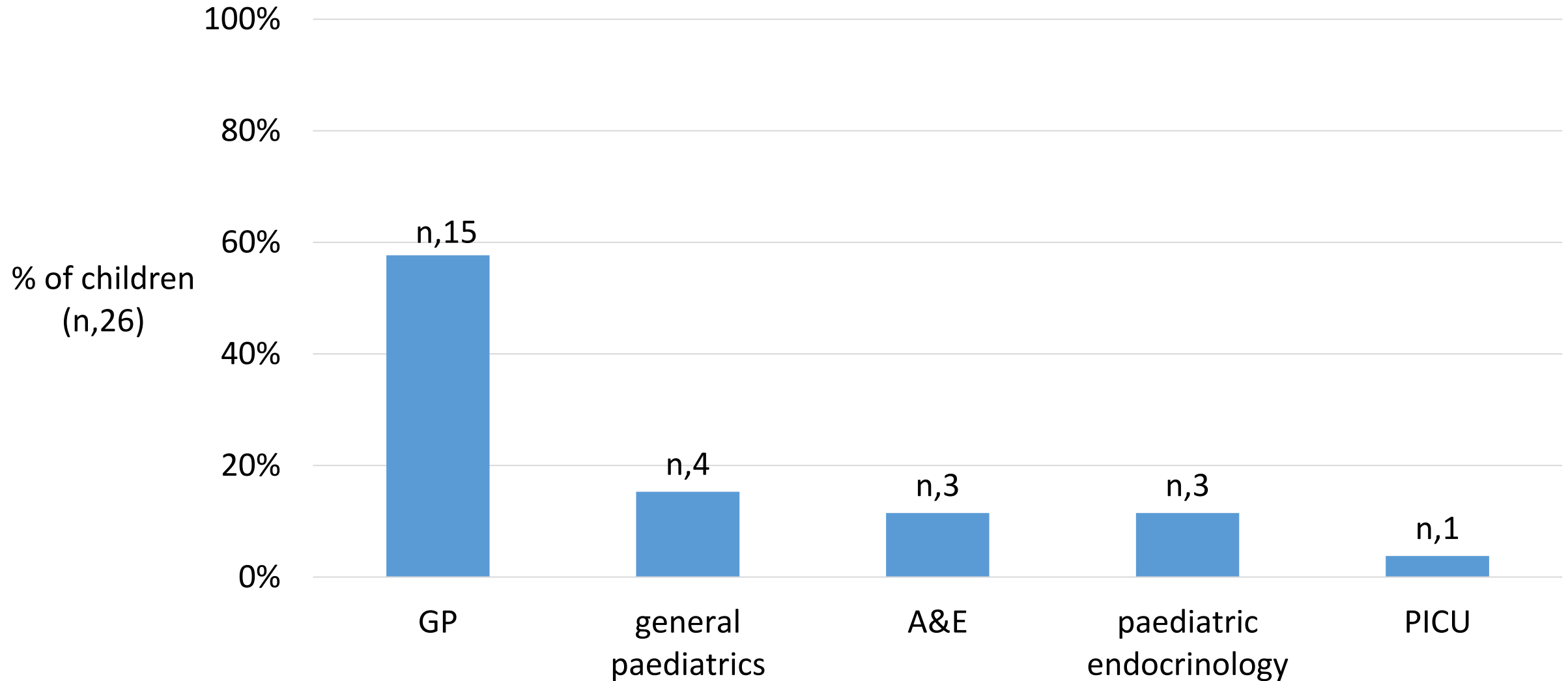
- 2.7 (0.2,5.0)

**Patient sex (n, 26)**



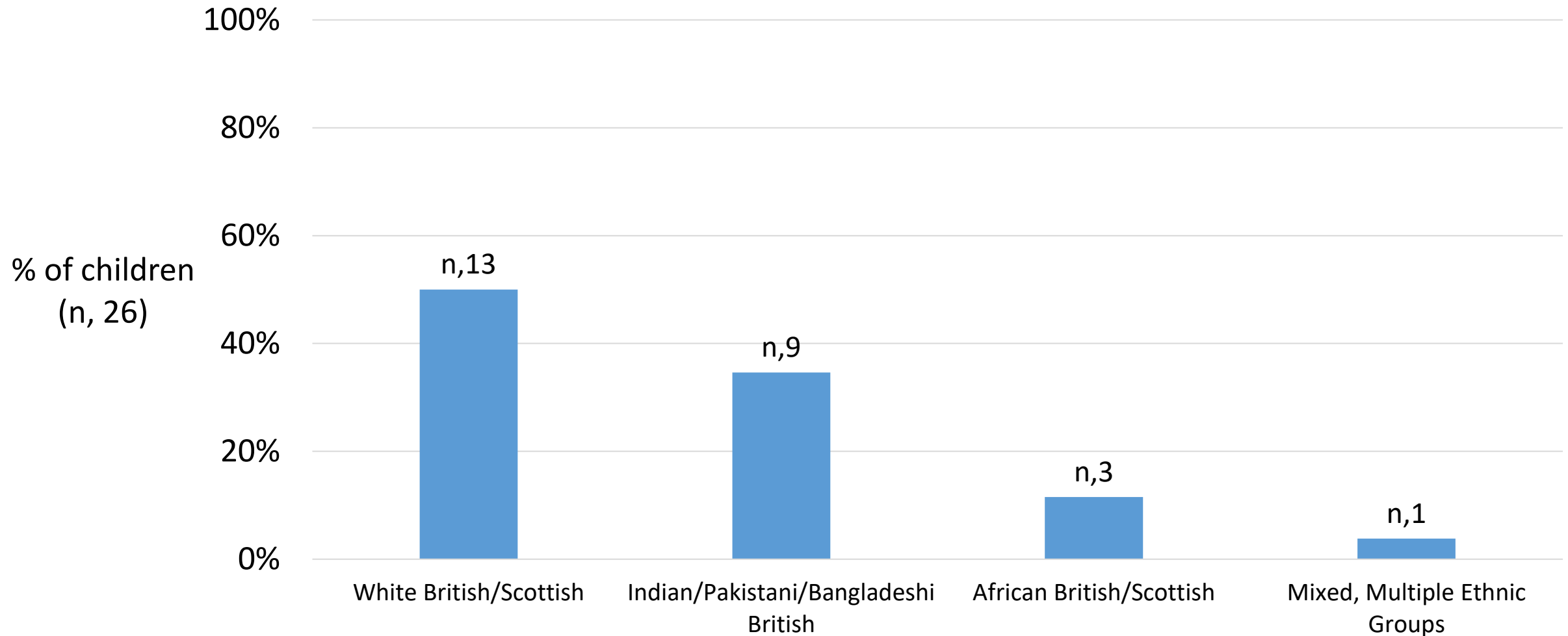
# Route of referral

- 58% (15/26) of referrals were made via GP

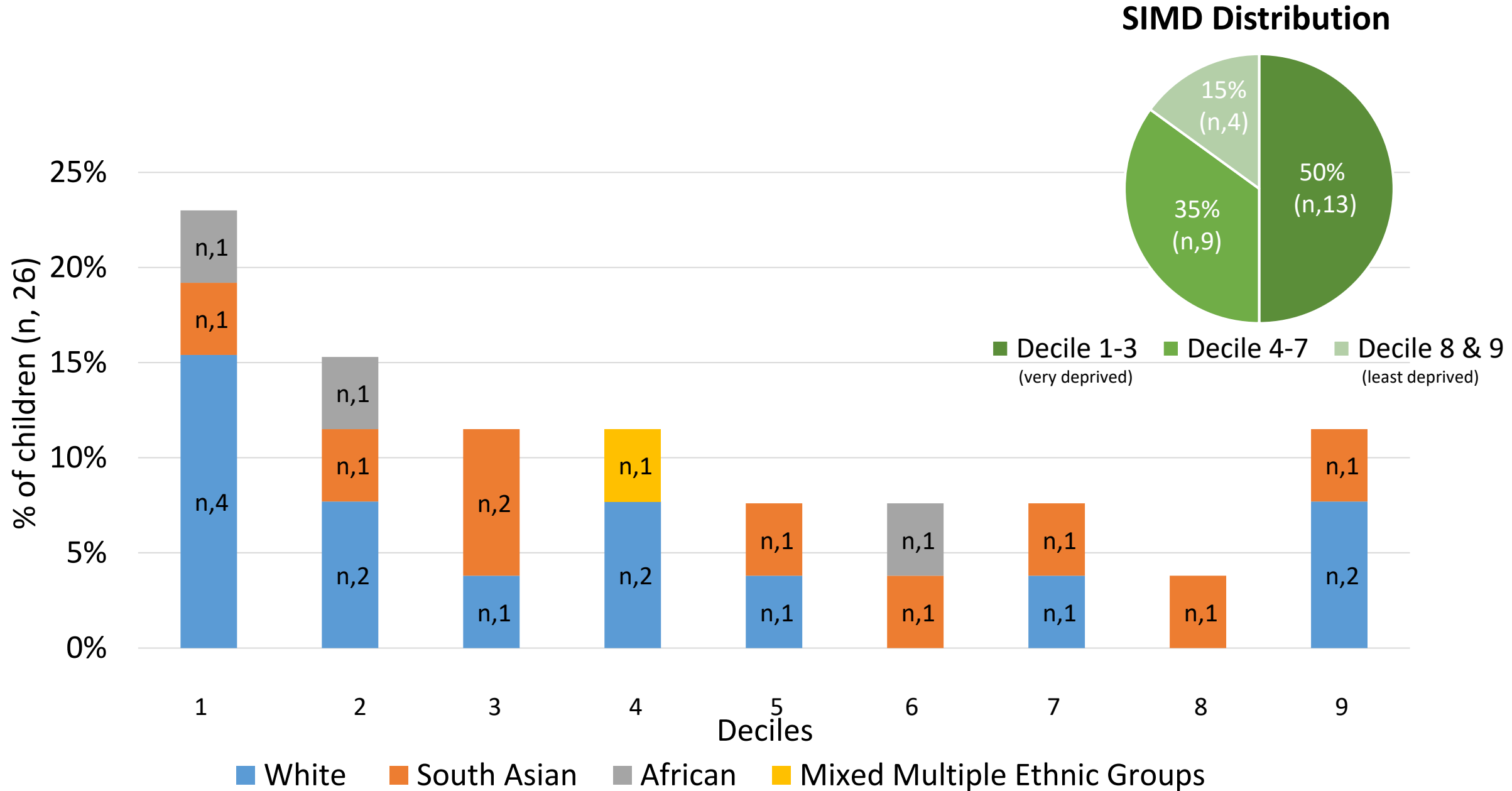


# Ethnicity

- 50% (13/26) of children were Caucasian
- 50% (13/26) were from ethnic minority backgrounds



# SIMD & Ethnicity

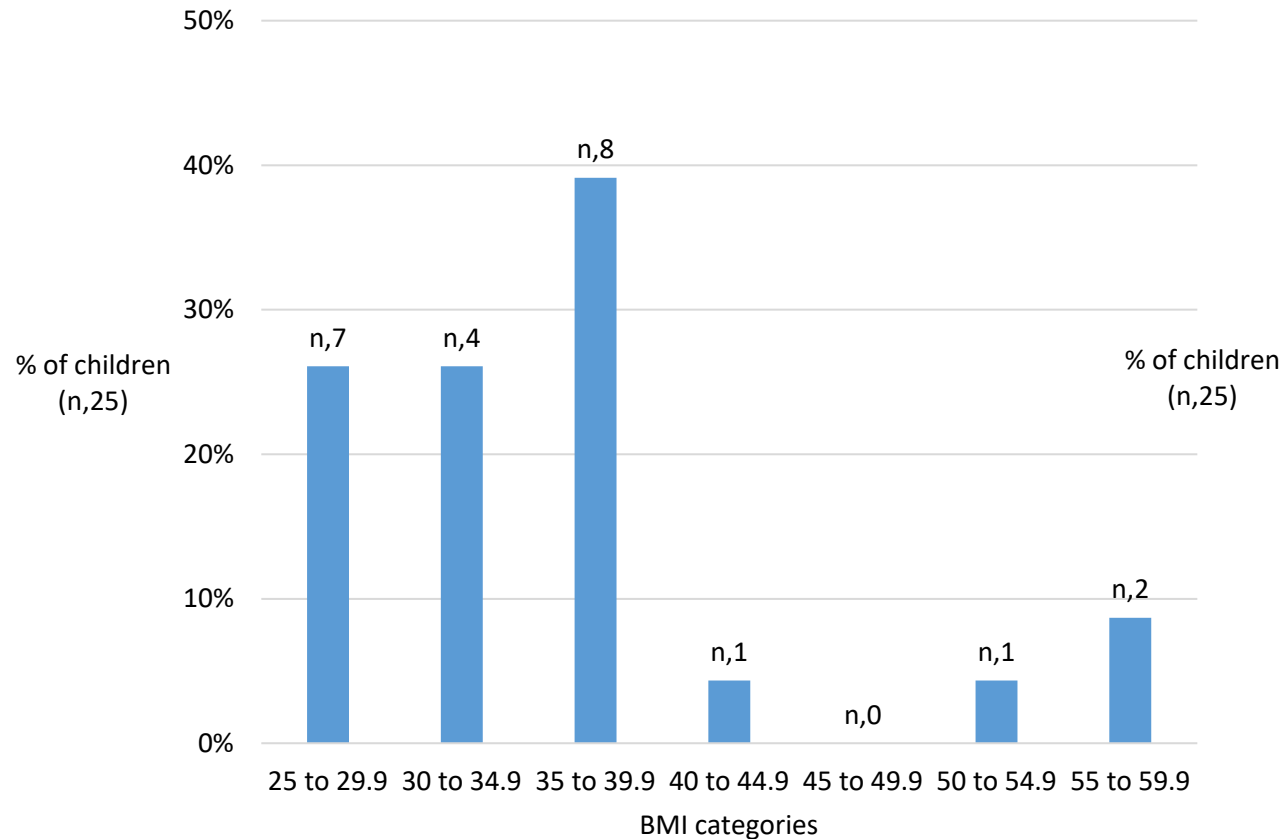


# BMI at presentation

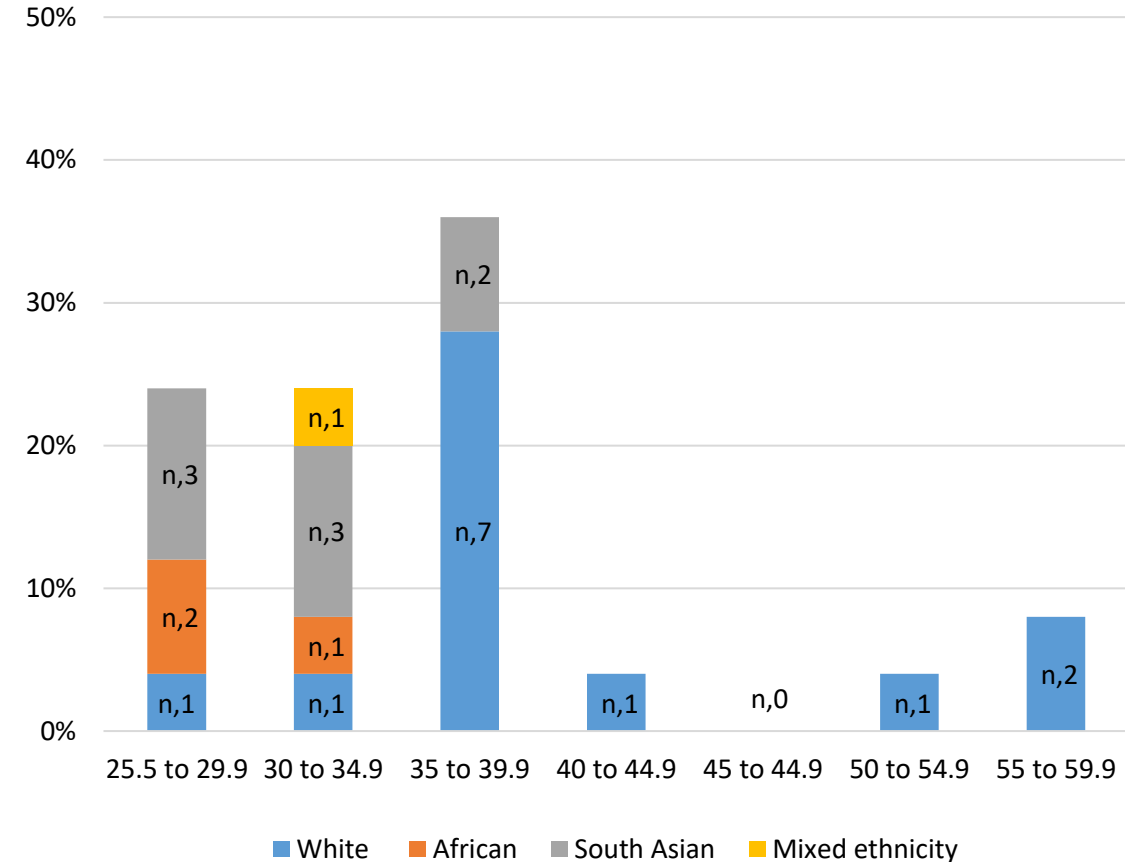
- All children had a BMI of >25 at diagnosis
- 54% had a BMI of >35 at diagnosis
- BMI, median (range): 35.1 (27, 58)

- Children from ethnic minority backgrounds had lower BMI at presentation

Body mass index (BMI) at presentation



BMI and Ethnicity



# Change in BMI SDS

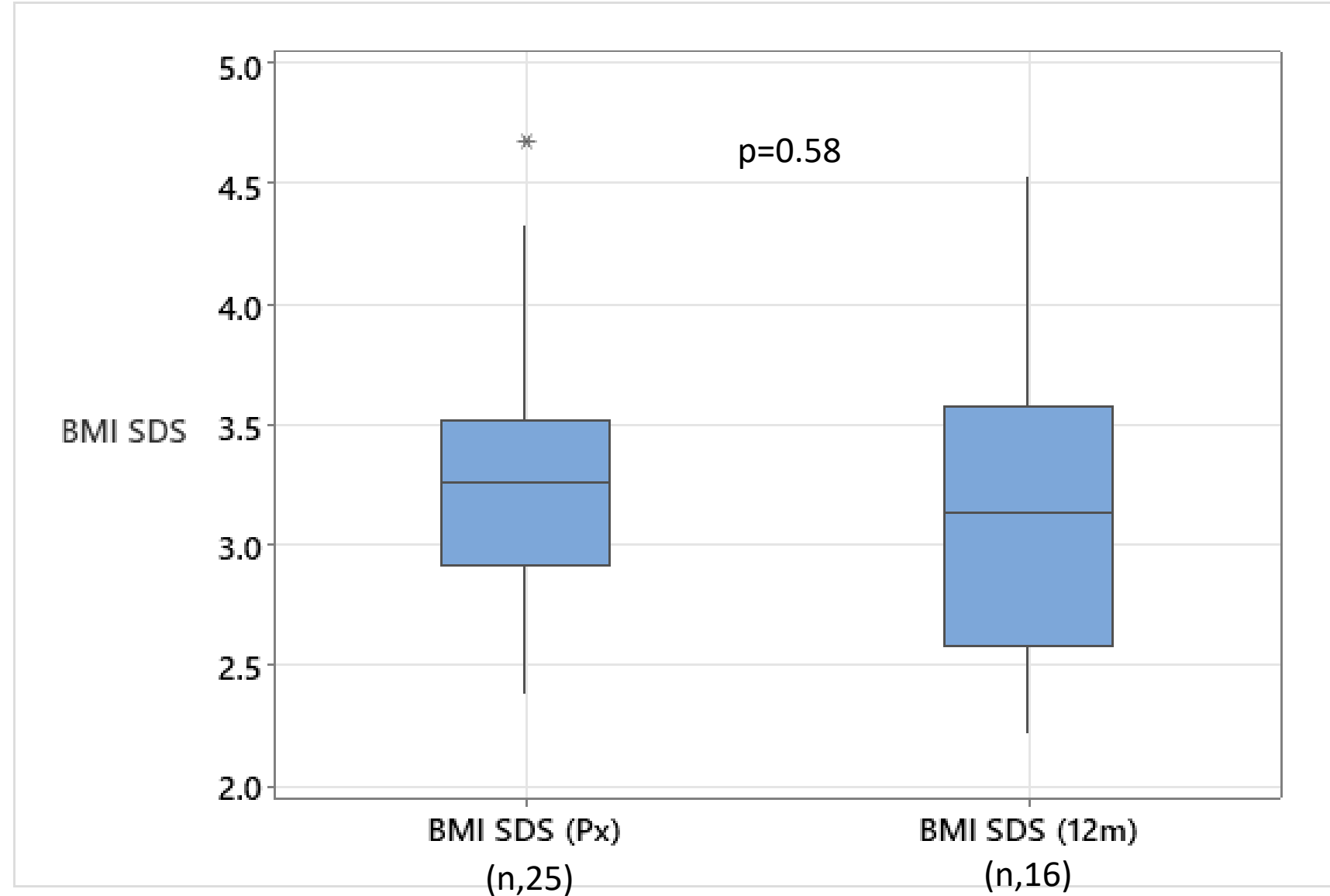
## BMI SDS

At presentation,  
median (range):

- 3.2 (2.3, 4.7)

At 12 months:

- 3.1 (2.2, 4.5)





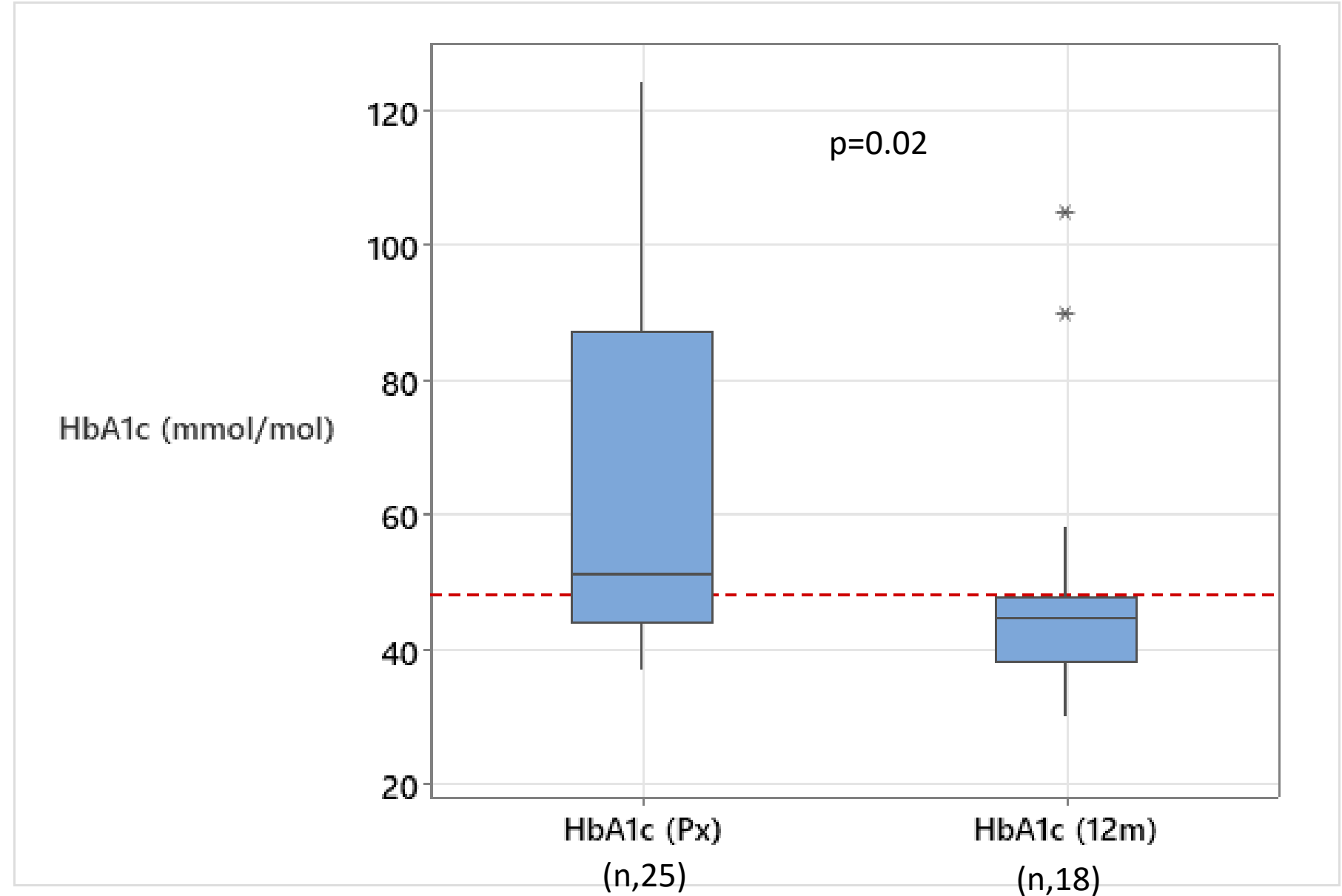
## HbA1c

At presentation,  
median (range):

- 51 (37, 124)

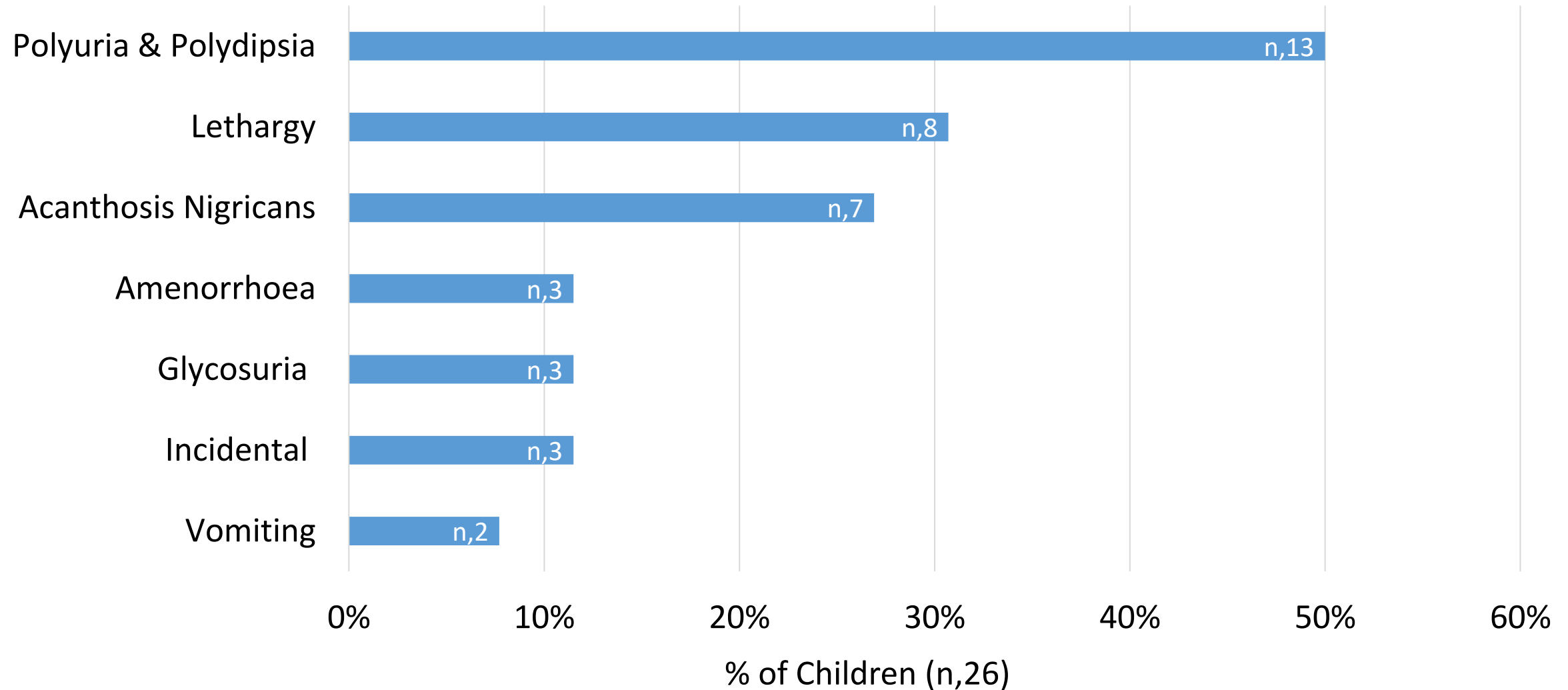
At 12 months:

- 45 (30, 105)

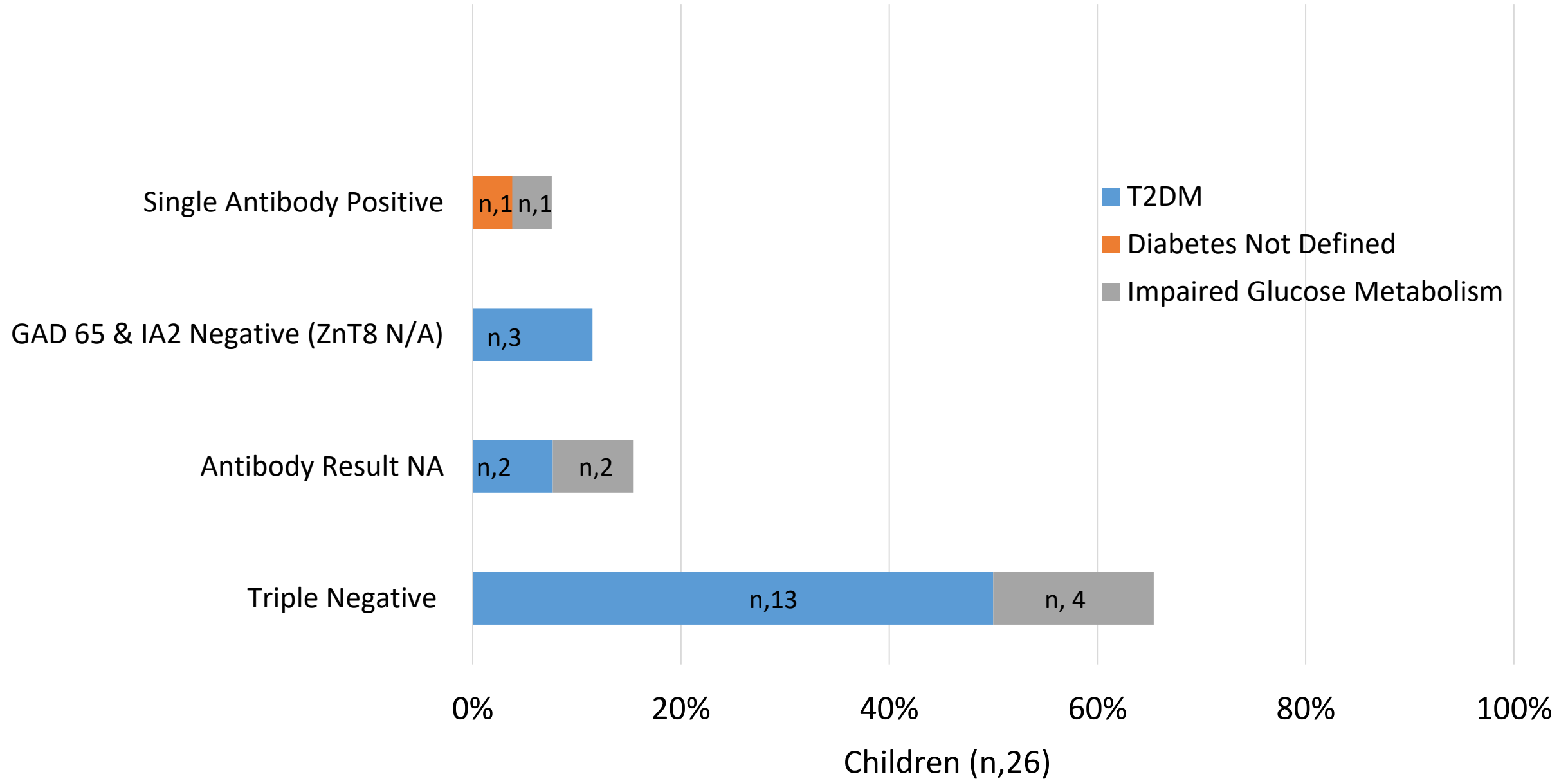


# Clinical features at presentation

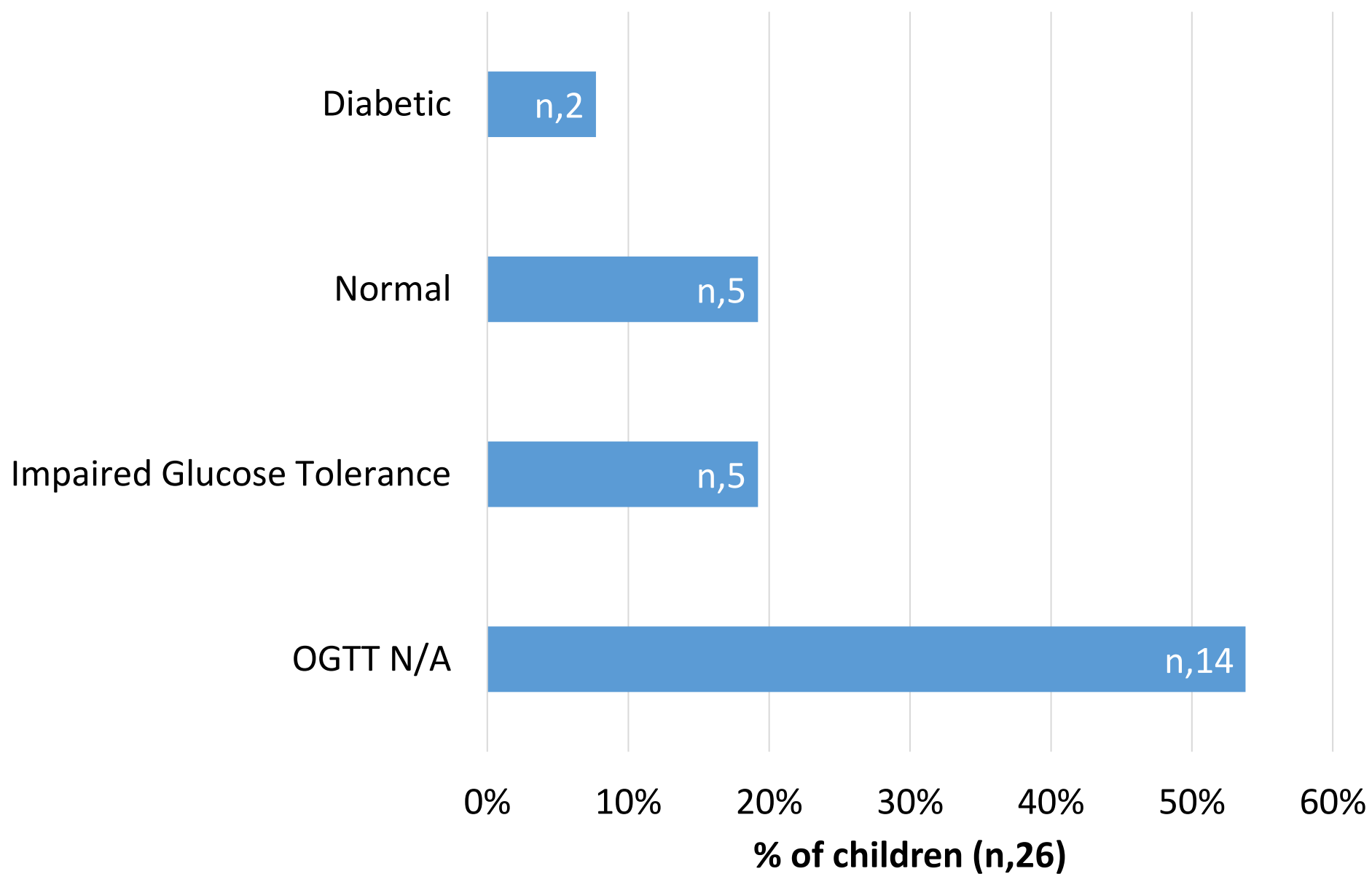
- 50% (13/26) had polyuria and polydipsia at presentation



# Antibody results



# OGTT results

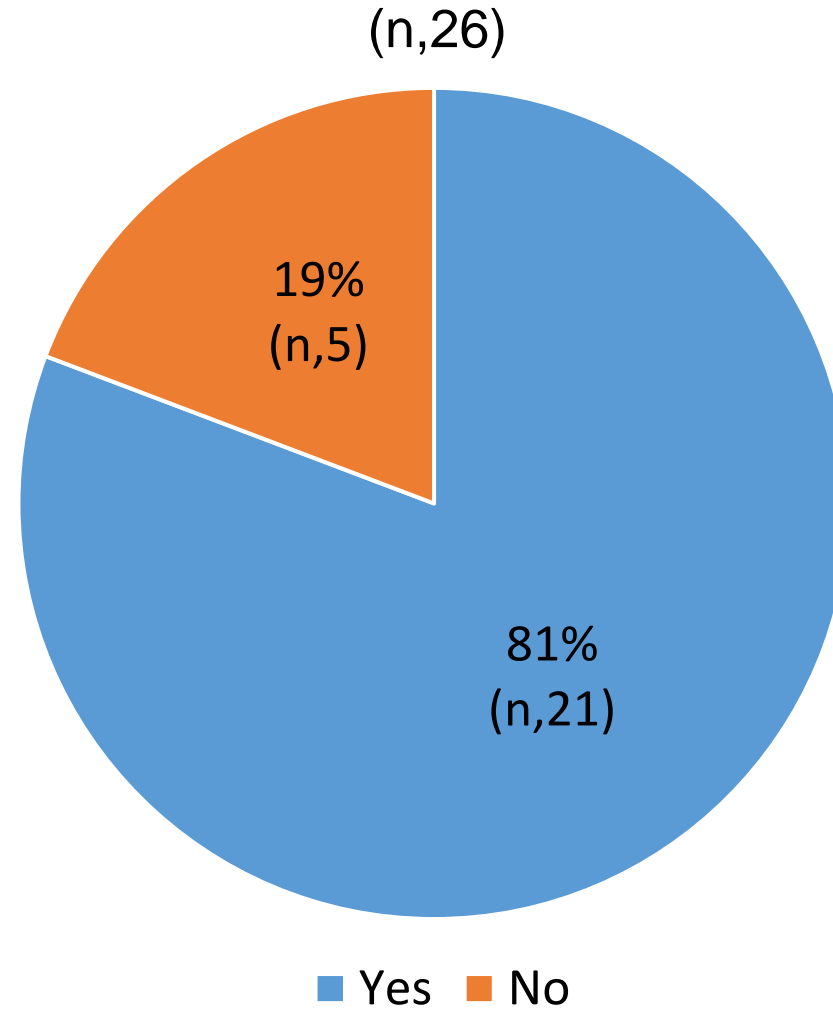


*Diabetes: OGTT  
≥11.1mmol/l 2-hour  
post OGTT*

*Impaired Glucose  
tolerance: 7.8-11.1  
mmol/l*

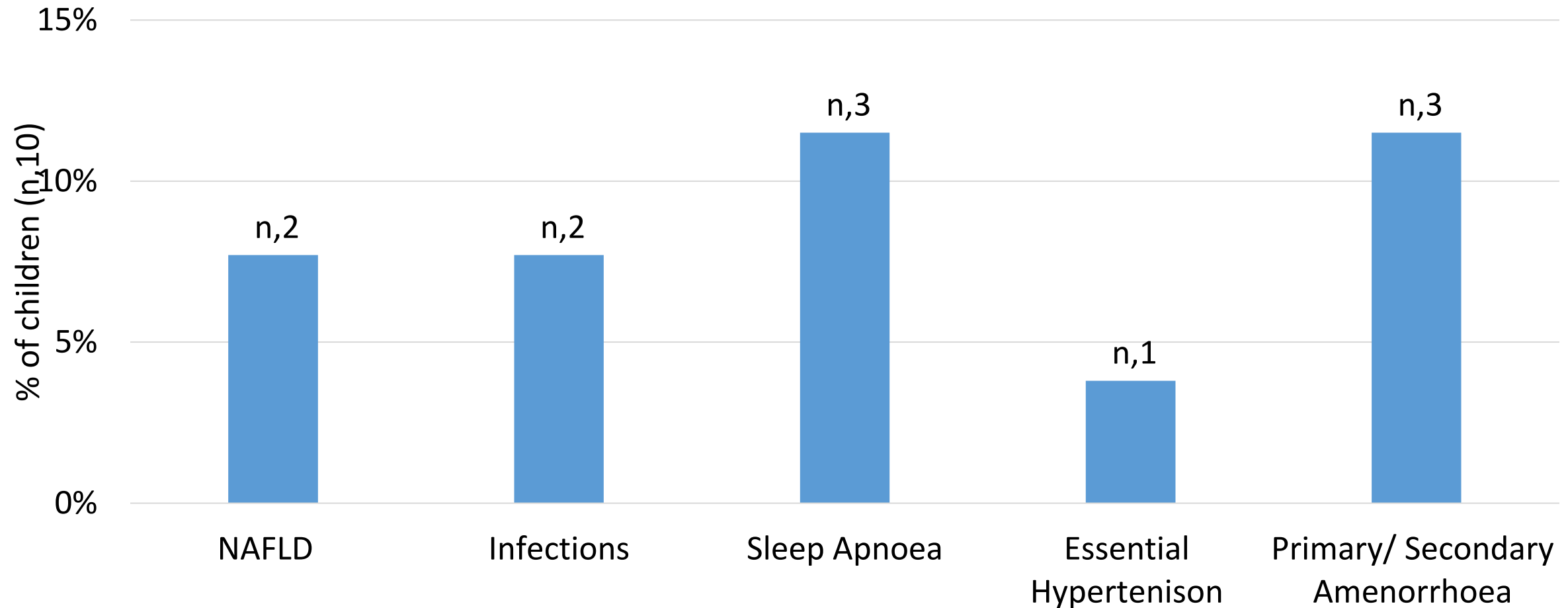
# Family history

- 50% (13/26) had a family history of T2DM in either one or both parents

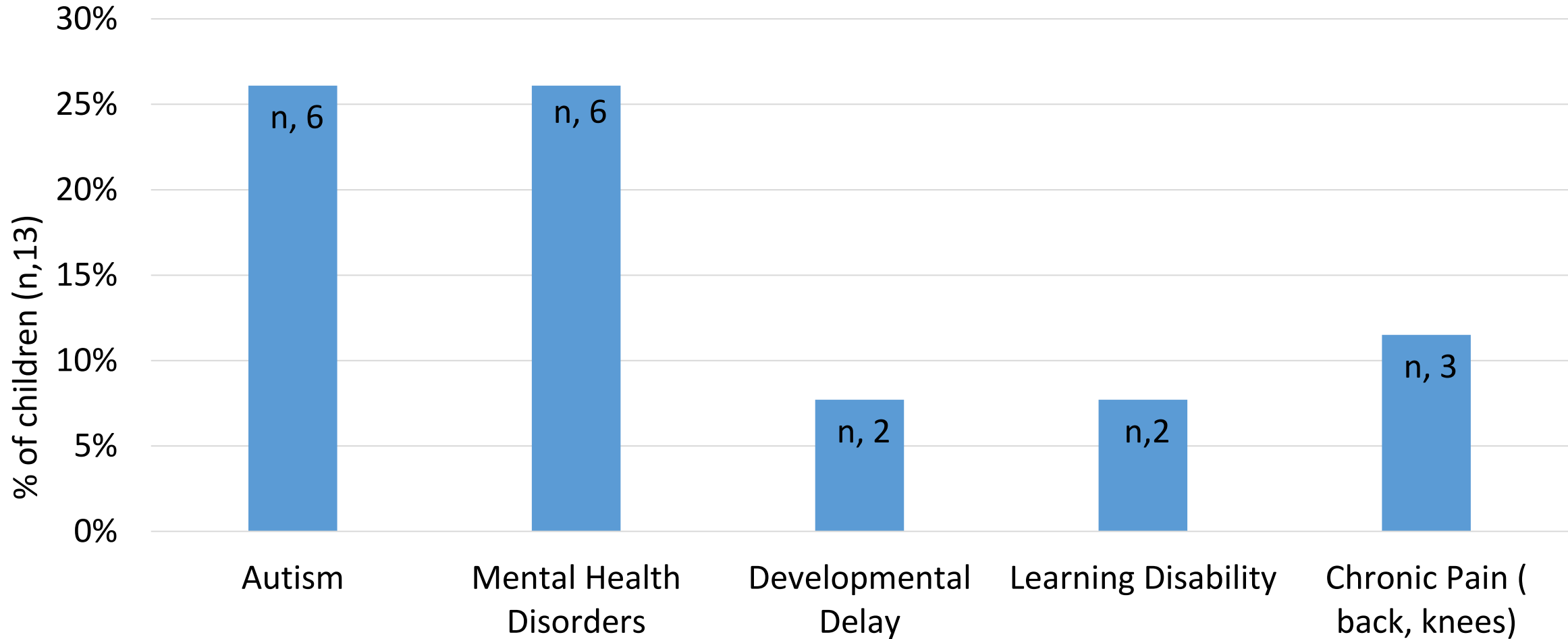


# Complications at diagnosis

- 38% (10/26) had complications at presentation

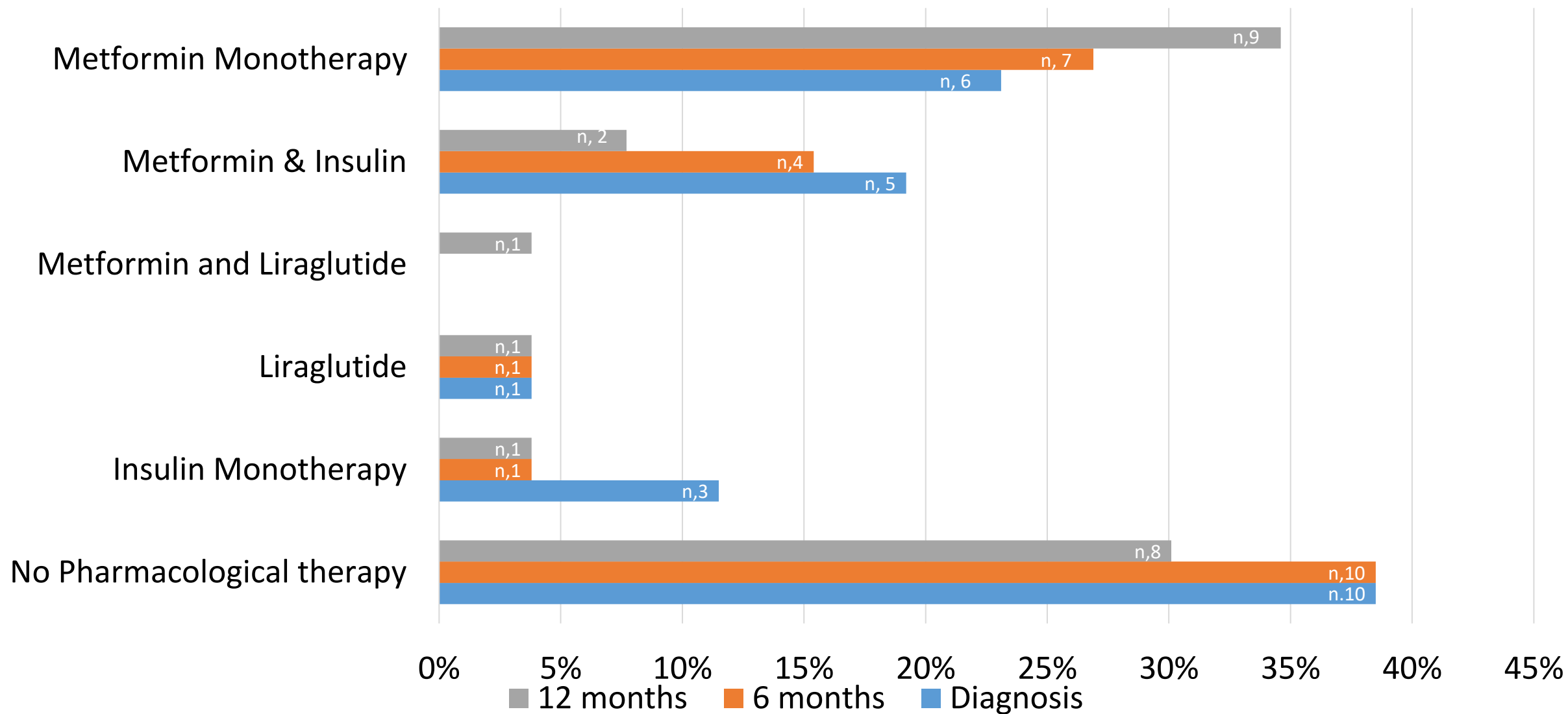


# Associated conditions



# Pharmacological therapy

- 58% (15/26) started treatment at presentation





- Majority of CYP in the cohort are obese and had a BMI SDS >2
- Ethnic variation in SIMD, majority from white ethnicity in Deciles 1-3 (very deprived areas)
- Lower BMI was noted in children from ethnic minority backgrounds
- Over 40% of the cohort had an associated psychiatric co-morbidity or learning disability.

## **Potential improvements**

- Annual Urine PCR/ACR in T2DM cohort.
- Ensuring HbA1c and BMI are done at consistent intervals
- Utilising more OGTT for diagnosis

## **Next steps**

- Further data collection and analysis (including BP data) - new Type 2 clinic
- Clinical benchmarking

# Type 2 Clinic Success Story

- Diagnosed March 2023. Started on Insulin- basal bolus.
- Poor compliance with injections. Delay in starting metformin.
- Had stopped taking insulin herself by August 2023
- Metformin recommended again August 2023. HbA1c 84.
- November 2023- moving more, HbA1c dropped, Metformin 1g BD
- February 2024- mood improved, walking, monitoring diet, taking metformin. HbA1c in normal range.

Date	HbA1c (mmol/mol)	Weight (kg)	BMI
May 2023	69	99.6	36.6
August 2023	84	99.5	37
November 2023	54	96.8	35.8
February 2024	36	96.8	36

- Audit completed by Salma Ali and Elina Joy
- Plan to re-audit
- Ensure patients reclassified on SCI according to diagnosis

## Any Questions?