British Society of Paediatric Endocrinology and Diabetes

1042 DOES THE USE OF TECHNOLOGY IMPROVE GLYCOSYLATED HAEMOGLOBIN LEVELS IN CHILDREN WITH TYPE 1 DIABETES MELLITUS (T1DM)?

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Background The 2017/18 National Paediatric Diabetes Audit (NPDA) in the U.K. reported that on average, insulin pump users with continuous glucose monitors achieved lower HbA1c levels compared to manual glucose checks.

Objectives This study involves children and young people (CYP) aged below 19 years with Type 1 Diabetes Mellitus (T1DM) attending a tertiary UK hospital. The aim was to compare median HbA1c outcomes by grouping patients according to their insulin regimens and glucose monitoring devices.

Methods This was a retrospective observational study using our hospital diabetes database to identify patients. Inclusion criteria were T1DM patients on multiple dose insulin (MDI) or insulin pump regimens. 405 patients were categorised by their insulin regimen and the type of glucose monitoring device in use, which included: manual checks, Dexcom G6, Libre Flash, insulin pumps with Low Glucose Suspend (LGS) and Closed Loop Systems (CLS). The median HbA1c was calculated for each group and analysed.

Results Of the 405 patients included, 187 (46%) used continuous subcutaneous insulin infusions (CSII) and 218 (54%) used multiple daily injections (MDI) regimens. Table 1 demonstrates the median HbA1c for each group of patients.

The lowest median HbA1c was in the pump group using a closed loop system, while those on MDI, even with Libre Flash, struggled with higher HbA1cs.

Dexcom G6 and Libre Flash users in the pump patient group had similar median hba1c levels.

Abstract 1042 Table 1

	Manual Checks	Dexcom G6	Libre Flash	LGS	CLS
Pump Patients	66 mmol/mol	58 mmol/mol	59 mmol/mol	59 mmol/mol	50 mmol/mol
MDI patients	68 mmol/mol	61 mmol/mol	68.5 mmol/mol		

Conclusions As per the published studies, this work supports the use of advanced technology in diabetes care and of closed loop systems to provide the best possible glycaemic control. Interestingly, despite Dexcom G6 being more expensive than Libre Flash, this small study has not shown any advantage for the use of Dexcom G6 in terms of diabetes control for CYP on insulin pumps.

British Paediatric Allergy Immunity and Infection Group

1043 SUBOPTIMAL ALLERGY KNOWLEDGE REINFORCES PENICILLIN ALLERGY LABELS IN CHILDREN

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Background Penicillin allergy (PenA) is the most common reported drug allergy in acute settings.¹ Delayed non-severe maculopapular rash is the most reported symptom. However, this is also a common feature of viral illness. The problem faced by clinicians is to determine whether the rash is allergic in nature, thereby affecting therapeutic decisions.

Objectives This study investigates how this conundrum is approached by front-line clinicians.

Methods A cross-sectional anonymised survey of prescribers working in a tertiary paediatric emergency department was performed. A clinical vignette described the choice of antibiotic for a child who previously developed a delayed non-severe maculopapular rash after administration of penicillin. Likert scale of agreement was used to evaluate the use of allergy pertinent questions.

Results Sixty-two prescribers with varied clinical grades responded. All respondents have encountered children with reported PenA in clinical practice. Twenty-six (42%) respondents would prescribe a penicillin-based antibiotic in the clinical vignette. The most sought allergy information was related to symptom(s) of the reaction (55/62; 89%). Thirty-eight (61%) respondents would inquire when the reported reaction occurred. Whilst 38 (61%) prescribers would clarify the time interval between ingestion and symptoms, a lower proportion (24/62; 39%) would verify if allergy referral or testing had been done.

Conclusions This single centred survey confirmed regularity of contact with reported PenA in acute settings. A suboptimal rate of allergy focused history was highlighted. Allergy education will be an invaluable first step in safe antibiotic allergy de-labelling and antimicrobial stewardship promotion.

REFERENCE

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Quality Improvement and Patient Safety

1045 BUILDING ALLIANCES AND CONVERSATIONS FOR INTEGRATED CHILD HEALTH

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Background This was a Darzi project performed as a collaboration between healthcare sectors, initiated by Great

Ormond Street Hospital and Primary Care Health Education England. Cross-sector learning is powerful and generates momentum for development (Garvin, 1993). The resilience of a system is offered by its ability to evolve (Atkinson, 2015).

Over the last few years, there has been a greater push in national policy to promote cross-sector working and learning, with more attention directed towards children's health services (NHS, 2019).

It can be a challenge to achieve effective integrated care for children and young people who are managed across different healthcare sectors. Such challenges can have an impact on the quality of care received.

Objectives This project focused on children with complex needs in North and Central London.

The first aim of this project was to explore the challenges to integrated care for paediatric patients with complex needs.

The second was to use cross-sector understanding to identify ideas and insights that might lead to sustainable systems change.

Methods Using the Royal College of Paediatrics guidance, 'complex' was defined as those children who required input from multiple health services.

The project, therefore, included different healthcare providers across healthcare sectors, alongside parents of children with complex needs.

The first step was stakeholder interviews to ascertain areas of interest and priorities.

Following this, multi-disciplinary (MDT) focus groups were held. Data were recorded and analysed after the discussion.

Finally, a large multi-system collaborative workshop was held, which invited insights and ideas for change from across sectors. This included parents, clinicians (MDT) and government bodies. Management leads from different hospitals and primary care sectors also attended.

Data from the event were recorded on paper as well as through illustrations using a graphic illustrator.

A thematic analysis was performed using the interviews, focus groups and the multi-systems workshop findings.

Results The workshop galvanised discussion which facilitated generative inquiry and conversations for future possibilities. Furthermore, it acknowledged systems blindness (including that we underestimate the complexities within healthcare systems) and challenged thoughts that lead to reluctance in co-production between families and clinicians.

The collective findings from the interviews, focus groups and the workshop yielded themes from which a framework of integrated working was created.

The Framework: Themes included mobilisation of specialist care closer to home, especially with recognition of parallel priorities for children with complex needs (e.g. missing school, transport, impact on families). Shared clinical ownership, cross-sector education and training to share perspectives and maintain quality of care across the patient journey, and harnessing technologies were also included. Citizen engagement was a key component, but parents reflected that they felt like the coordinators of care when trying to achieve integration and the balance between empowering and burdening families was discussed.

Outcomes and learning were shared across all stakeholder groups, including government bodies.

Conclusions Feedback revealed that such collaborative practices resulted in higher levels of satisfaction and a more informed approach to healthcare initiatives.

This project highlighted the importance of multi-system, cross-sector conversations in achieving integrated care for children with complex needs.

British Association of General Paediatrics

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DIAGNOSTIC ACCURACY OF PRESENTING SYMPTOMS IN PREDICTING SARS-COV-2-POSITIVITY

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Background Clinical characterisation studies of children with laboratory confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection have enabled better understanding of paediatric coronavirus disease 2019 (COVID-19). However, to our knowledge, there have been no studies evaluating the predictive value of clinical symptoms for paediatric COVID-19. This gap in evidence is significant as frontline healthcare settings use clinical symptoms to determine infection control policy and patient cohorting measures.

Despite studies showing that children have a mild illness, the risk of children with comorbidities and other clinical vulnerabilities contracting COVID-19 remains poorly defined.

Objectives • To determine the diagnostic accuracy of presenting clinical symptoms in predicting SARS-CoV-2 positivity.

• To assess the co-relation of demographic characteristics, clinical co-morbidities and vulnerabilities with SARS-CoV-2 positivity.

Methods Retrospective single-centre observational study of children with suspected COVID-19 who underwent SARS-CoV-2 reverse transcription polymerase chain reaction (RT-PCR) testing on admission to a specialist children's hospital in the United Kingdom. Data was collected from electronic patient records from 17/03/2020 to 14/04/2020.

Results 210 children, aged 0–16 years, median age of 2.5 years (Interquartile range 0.7–7.0) were included. 29 (14%) were SARS-CoV-2-positive. A higher proportion of SARS-CoV-2-positive children were male (62% vs 50%, $p=0.24$) and at the extremes of age (below 6 months and above 10 years).

SARS-CoV-2 positive group had a higher incidence of diarrhoea, vomiting, abdominal pain and seizures whereas cough was seen more frequently in the SARS-CoV-2 negative group. Proportions of children presenting with any respiratory symptoms was similar in both SARS-CoV-2 positive and negative groups. Sensitivity of clinical symptoms individually or in combination in predicting SARS-CoV-2 positivity was 70% or lower. Specificity for predicting SARS-CoV-2 positivity was more than 80% for wheeze, abdominal pain, diarrhoea and vomiting, reduced feeds, fever, lethargy, rash and headache.

There were significantly more children of Black, Asian and Minority ethnic (BAME) groups in the SARS-CoV-2-positive group (72% [21/29] vs 46% [84/181], $p=0.009$).

Proportions of children with comorbidities in both SARS-CoV-2-positive and negative groups were similar; 48% (14/29)