Collaborative Working Project executive summary

Project title	Co-development and roll out a National educational programme on the monitoring and management of patients with islet autoantibody-positive pre-stage 3 type 1 diabetes diagnosis.
Partner organisation/s	**BSPED British Society for Paediatric Endocrinology and Diabetes (BSPED) Pre T1D Special Interest Group** c/o BioScientifica Ltd Starling House 1600 Bristol Parkway North Bristol BS34 8YU UK **Sanofi UK** 410 Thames Valley Park, Reading, RG6 1PT
Project rationale	Type 1 diabetes is a condition caused by autoimmune damage to the insulin-producing pancreatic beta-cells leading to severe endogenous insulin deficiency. Autoimmune type 1 diabetes accounts for approximately 5–10% of all cases of diabetes worldwide and in the UK. (Maahs et al, Endocrinol Metab Clin North Am. 2010 Sep;39(3):481–497) In the UK, around 25% of those with newly diagnosed type 1 diabetes present with life-threatening DKA, with higher rates in the very young (up to 30% in those under 5 years of age) and in ethnic minority groups. (Besser REJ, Ng SM, Gregory JW, et al. Arch Dis Child 2022;107:790–795.) Diabetic ketoacidosis at clinical presentation is a life-threatening but avoidable complication of diabetes mellitus requiring rapid assessment and is often managed in intensive care units. DKA at diagnosis is associated with adverse long-term glycaemia in some studies (Duca LM, Wang B, Rewers M, Rewers A. Diabetes Care. 2017 Sep;40(9):1249-1255.). It is now widely accepted that Type 1 diabetes is characterised by three stages:

	• Stage 1: Initiation of the autoimmune process (presence of two or more islet autoantibodies); Importantly, currently early- stage is associated with normoglycaemia. Stage 1 is associated with a 44% risk of progression to stage-3 within five years of developing stage-1. (Besser REJ, Ng SM, Gregory JW, et al. Arch Dis Child 2022;107:790–795.) • Stage 2: Persistence of islet autoantibodies with further loss of βcell function and development of dysglycaemia. Stage 2 is associated with a 75% risk of progression to a diagnosis of T1D within 5 years, and a lifetime risk nearing 100%. (Insel R et al Diabetes Care 2015;38:1964-1974.) • Stage 3: Stage 3 type 1 diabetes with hyperglycaemia which meets ADA criteria. In the absence of early testing, most patients present in this stage. Early detection of Type 1 Stages 1 and 2 involves antibody testing from capillary and venous blood samples (stage-1) followed by oral glucose tolerance testing (OGTT) to confirm dysglycemia (Stage-2). Although it is largely accepted within the clinical diabetes community that there are 3 stages of autoimmune type 1 diabetes, early detection and management of pre-symptomatic disease is not routine practice in UK diabetes clinical care. Increasing the detection of autoimmune type 1 diabetes before it reaches stage 3 in the UK has been an area of focus for key thought leaders, patient organisations and Industry partners grouped as INNODIA to 'fight type 1 diabetes'. (About INNODIA and its goal). Other patient groups such as Breakthrough T1D and Diabetes UK (Diabetes UK - Know diabetes. Fight diabetes. | Diabetes UK) aim to provide 'access to better treatments and technologies for everyone with type 1' and to ensure 'diabetes can do no harm'. (About Breakthrough T1D UK & our impact | Breakthrough T1D UK)
Project period	Q1 2025 to Q3 2026

Project objectives	The project will seek to: • Provide and disseminate education to healthcare professionals to increase awareness and knowledge of islet autoantibody-positive pre-stage 3 type 1 diabetes. Aiming for patients to be cared for in line with recently published JDRF Breakthrough type 1 guidelines (Consensus guidance for monitoring individuals with islet autoantibody-positive pre-stage 3 type 1 diabetes | Diabetologia (springer.com)). BSPED have recently adapted this for a paediatric audience. • Provide education on how to effectively monitor pre-symptomatic T1D aligned with consensus guidelines from BSPED. • Education will also increase awareness of current screening studies such as ELSA, T1DRA, INGRID, INNODIA, and labs offering reference IAb confirmatory islet autoantibody testing (UK Islet autoantibody registry, UKIAb, www.ukiab.org). • Provide education on the importance of using islet antibody testing for the confirmation of diagnosis for patients recently diagnosed with T1 or T2 diabetes to reduce the risk of potential misdiagnosis. The project has the potential to deliver the following outcomes for: People with positive islet autoantibodies: • Education provided to specialists may result in improved care for example, the avoidance of misdiagnosis and its long-term consequences. • Clinicians with increased knowledge of the importance of screening and monitoring could reduce the incidence of DKA upon diagnosis and associated mortality. • Provide the case for change that could lead to improved care packages to support psychological and physical wellbeing throughout progression of the stages of Type 1 diabetes for the patients and family caregivers. NHS: • Improved knowledge on islet autoantibody-positive pre-stage 3 type 1 diabetes diagnosis enabling more proactive and education of patients where appropriate. • Give clarity on possible best practice that could be shared to reduce the unplanned care associated with DKA at diagnosis of Type 1 diabetes.

	Sanofi: • An opportunity to learn about the variation in approaches to screening and management of individuals with islet positive antibody diabetes. • Improved corporate reputation with the associated partner organisations. • Sanofi has a product in aT1Ds that is scheduled for Regulatory and reimbursement review in 2025. The total cost of the Collaborative Working Project is approximately £110,000. Proportions: Sanofi 60% NHS 40%
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