Context In June 2021, NHS waiting lists reached record highs, with 5.45 million people waiting for treatment (for example in the East of England 52-week waits across the region have increased to 42K in Feb 2021 from c.400 12 months previously). This dramatic growth in waiting lists during the Covid-19 pandemic, is likely resulting in deterioration in clinical outcomes, avoidable emergency admissions and patient distress adding to the burden of disease. There is also variation in how patients are currently assessed - potentially leading to health inequalities in those waiting for treatment. The pressure on NHS resources is compounded by the limited scope of current methods to generate detailed patient risk profiles and provide an effective means of triaging between patients with the same P number (large numbers of patients are given the same P codes). The pilot project ,to be evaluated, involves two hospital sites, one the intervention site (Colchester) and the second the control site (Ipswich).

Ratonale This current challenge is leading to a deterioration in clinical outcomes amongst patients waiting for treatment combined with inefficiencies in how limited NHS resources are planned and managed to meet patient needs. The rationale for the C2Ai project is to provide clinical decision-makers with enhanced risk analysis providing access to detailed risk profiles for each patient generated by an Ai enabled platform using existing NHS hospital data. It is hoped this will enable clinical teams to differentiate and prioritise between patients and strengthen their ability to get the right patient to the right facilities at the right time - thereby reducing deterioration and health disparities while increasing staff and service efficiencies.

Aim The proposed evaluation will address the impact of the enhanced risk analysis on triaging patients for elective care using key indicators related to efficiency and patient outcomes, generating evidence and insights to support decisions regarding the future development and scale up of this Ai based approach.

Inputs	Activities	Outputs	Outcomes (Outcomes and related measures to be confirmed by the selected evaluation team).
		Successful delivery of project plan- on time and budget without significant delays, leading to:	
AI Platform: Prototype Ai platform and related process made available to support delivery with background briefing provided to the ESNEFT counterpart team (clinical and non clinical inc.IT) during inception.	**ESNEFT IT:** ESNEFT to ensure hardware and software are available and ready to use at project initiation and confirm a named clinical lead and non clinical lead to C2-Ai.	**ESNEFT Team:** ESNEFT staffing, IT equipment and related training in place and completed (for each specialty pathway).	**Reduced patient deterioration**
ESNEFT IT: Confirmation of IT infrastructure and data requirements with ESNEFT delivery team and IT counterpart - PTL data if possible or HES data. In addition - 24 months HES data (all data in CSF format).	**Data Security:** ESNEFT and C2-Ai to confirm protocols and related processes for data submission and analysis. Finalise Data Sharing Agreement (DSA). Ensure online C2-Ai platform is fully operational and accessible by ESNEFT team with support provided by C2-Ai for its use as needed.	**Data:** Data protocols for uploading, analysis and downloading agreed with Data Sharing Agreements signed (for each speciality pathway).	**Increased Staff Efficiency (Clinical and non-clinical)**
Team: ESNEFT to confirm project delivery team and their roles and responsibilities.	**ESNEFT Team:** ESNEFT to engage with and provide support and training to delivery team on the basis of initial training needs analysis undertaken during project start up (including IT team).		**Increased patient throughput for specified procedures including weekends**
Clinical Pathways: Confirm clinical pathways and target patient population to be included in the project analysis.	**ESNEFT Team:** ESNEFT to establish and brief Clinical and Operational Reference Group (CRG) on their role in project delivery.	**Comprehension:** Clinicians and users of the platform understand data required and the process by which results are generated from the platform.	**Reduced health inequalities /disparities**
Data Security: Confirmation of secure data upload protocols as the basis for uploading data from ESNEFT. Provide pre-existing template for Data Sharing Agreement (DSA).	**Data:** Data acquisition from ESNEFT and upload.	**Comparison:** C2Ai outputs in terms of prioritisation of patients at Colchester site, compared against existing data from control site (Ipswich).	**Staff engagement/ satisfaction/acceptability/feasibility (clinical and non-clinical)**
Guidance: Provide guidance and templates for methodology and uploading process for Weighted Scoring System generated by the C2-Ai analysis /templates (Data Sharing Agreement) made available during project set up to enable project initiation flows to commence.	**Data:** Data collation, analysis and output for evaluation including PTL analysis and related weighted scoring system.	**Embedding:** C2Ai embedded and actively being used to prioritise patients awaiting treatment (for each specialty pathway).	**Reduced duplicates on patient list**
ESNEFT Team: Engage and support ESNEFT staff providing guidance to clinicians and non-clinicians during design/delivery phase and ESNEFT and Evaluation team during project eval .	**PTL:** Review and Adapt once the initial PTL analysis has been provided, including any adjustments of the scoring matrix weightings as appropriate to the CRG and ESNEFT delivery team.		
Task and Finish: ESNEFT to establish Project Task and Finish group and support the CRG and its role in project delivery.	**PTL:** Ongoing PTL download and clinical validation (monthly?) in consultation with ESNEFT delivery team.		
IT hardware: (including necessary software) and related staffing with appropriate expertise for successful delivery of the project.			
Data: All data needed for successful delivery and related operating protocols with reference to data collection, sharing, analysis and use confirmed and agreed (Data Sharing Agreement).			
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