Study Objectives
Collate a body of literature identifying the likely impact of medications on the status of individual essential nutrients. Numerically score the effect of each medication on every essential nutrient using a Likert scale in order to quantify any impact and incorporate into a database together with other inputted relevant personalised information.
Develop an easy to use platform to enable interrogation of this data that will deliver evidence based personalised nutritional recommendations relating to diet and supplementation.

Background
Significant numbers of patients are deficient in micronutrients with recommendations in place to manage this situation. Many patients also require medication(s), often from different classes to control co-morbidities. There is a general lack of awareness that medications can negatively impact upon nutritional status especially when taken long term or used concurrently. This is mainly because the relevant literature is disparate and poorly collated. Currently no tools allow this data to be used to quantitatively determine the single or cumulative impact medications might have on nutritional status to help further personalise dietary and supplement recommendations.

Method
A search strategy was performed using keywords and the Medical Subject Headings (MeSH) of classes of drugs as defined in the British National formulary of non-parenteral, licensed medications-prescription and over-the-counter by generic and brand name and 26 recognised micronutrients as well as descriptors of the microbiome. The search was conducted of electronic databases of peer reviewed literature published through to September 2018. Other references or review articles identified within the primary research were also examined. Studies were screened against inclusion criteria, followed by a review of the abstract and then the full paper.

Results
1050 references were identified with 4073 incidences of a medication interacting with 25 micronutrients, essential fatty acids and the microbiome. These were assessed as either major, moderate or minor based upon the conclusion/s of the author/s of the publication. A medication database was assembled, which is a comprehensive collection of over 3000 prescription or over-the-counter medications available in UK, by brand and generic name. Within the database, an algorithm was developed that enabled the impact of each medication on micronutrient status to be interrogated quantitatively and cumulative scores from multiple medications aggregated. The work enabled an evidence-based, interactive database to quantitatively assess the impact medication/s might have upon micronutrient status through an easy to understand report of summary findings. Potential minor and moderate negative impacts resulting from inputs can be advised to be corrected firstly by diet, and any major potential deficiencies by additional supplementation wherever necessary.

Conclusion
This tool enables rapid assessment of the impact medication/s might have upon micronutrient status through an easy to understand report of summary findings. Potential minor and moderate negative impacts resulting from inputs can be advised to be corrected firstly by diet, and any major potential deficiencies by additional supplementation wherever necessary. The impact of multiple medications is rapidly evident. This development provides the opportunity to access a tool that complements and contributes to optimise the nutritional status of patients by delivering robust evidence-based recommendations.