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Keele University

Intercalation Research Project

Project Title:	Monitoring in patients with diabetes and thyroid function: How well are we doing and how do we change practice?
Lead Supervisor: **Name:** **Department:** **Email Address:** **Telephone:**	 Dr Chris Duff Clinical Biochemistry chris.duff@uhns.nhs.uk 01782 674264
Co-supervisor: **Name:** **Department:** **Email Address:** **Telephone:**	 Prof. Tony Fryer Clinical Biochemistry anthony.fryer@uhns.nhs.uk 01782 674245

Aims

Please outline the aims of your proposal (250 words):

This project aims to:

1. Determine whether national guidance on screening for thyroid dysfunction in patients with diabetes is being followed (and whether the reciprocal screening for diabetes in patients with thyroid dysfunction is likewise followed). This will utilise existing data sets on biochemical testing patterns in these patients in order to assess adherence to national guidance.
2. Explore and implement modalities to change screening behaviour and improve adherence to guidance. This will comprise two components (a) evaluate the options for service improvement, examining the possibility of using both IT and other educational tools to improve the quality of screening in these patients and (b) pilot and evaluate and intervention package.

Research Plan & Methodology

Explain how you intend to carry out the study. This includes the sampling strategy you intend to use, the data collection process and an analysis plan (750 words):

This project comprise two phases.

Phase 1: Assessment of adherence to guidance
This phase will use established data extraction techniques to collate retrospective laboratory data on thyroid function and glycaemic indicators (glucose, HbA1c) and use this data to evaluate whether the recommended screening frequencies are observed. Data analysis will follow a similar process to that used in the INTERCEPT study (see Driskell et al. Inappropriate requesting of HbA1c is widespread: Assessment of prevalence, impact of national guidance and practice-to-practice variability. Clinical Chemistry 58, 906-915. 2012 and Driskell et al Reduced testing frequency for glycated haemoglobin, HbA1c, is associated with deteriorating diabetic control. Diabetes Care. 37:2731-7. 2014) to evaluate the proportion of patients with diabetes who have inappropriate screening for thyroid disease (either over-testing or under-testing). Similarly, patients with known thyroid dysfunction will be assessed as to whether appropriate targets for screening for diabetes are met.

Phase 2: Use of educational tools to improve screening in high risk patients
This phase will firstly, use a literature review to evaluate, in the context of the findings from phase 1, which approaches to improving practice would be best suited to each scenario. Such educational tools may include the use of order communications (i.e. electronic requesting) packages currently in use as well as the Laboratory Information and Management System (LIMS). Evidence shows that adherence to guidance following such educational approaches often requires multiple modalities and as such a package of measures will be developed. The project will then pilot these measures by liaising with the appropriate requesting clinicians (in primary and/or secondary care). The impact of these educational measures will be assessed by re-evaluating requesting behaviours post-implementation as well as obtaining feedback from requesting clinicians around the suitability of the approach.

It is anticipated that this study will result in real change in requesting patterns as well as reducing unnecessary testing and improving screening and hence clinical outcomes for the large number of patients with these long term conditions.

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Supervision Plan

Highlight the supervisory support available to the student (250 words):

The student will be supervised on a day to day basis by Dr Duff who is experienced in data extraction software and analysis of such large data sets. He will be supported by Professor Tony Fryer who has extensive experience in improving the quality of laboratory monitoring and the supervision of students performing similar projects. Previous work (eg INTERCEPT project) has been funded by the National Institute for Health Research Healthcare Scientists Fellowship Scheme illustrating the fact that this is considered to be of national importance.

The student will also have access to data handling support from the National Pathology Benchmarking Team based at Keele University and methodology and statistical support provided under the auspices of the Health Services Research Unit (HSRU) based within the Institute of Science and Technology in Medicine (ISTM) at Keele University. The project will also provide opportunities to interact with both secondary care and primary care healthcare professionals responsible for monitoring patients with these conditions as well as, via already established links with the local branch of Diabetes UK, with patients with these conditions and the impact that such changes might have on their life.

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Signatures & Declarations

Please ensure that all signatures are collected – otherwise your application may be delayed:

Principal Investigator:	Dr Christopher Duff
Signature:	
Clinical Director :	Dr Richard Chasty
Signature:	

Deadline 31st September 2014

Please submit the electronic version of your intercalation project to Keira.Watts@uhns.nhs.uk. If you have any enquiries, feel free to contact the Academic Development Team by phone or e-mail: