THE COLLEGE OF RADIOGRAPHERS
INDUSTRY PARTNERSHIP SCHEME
SUPPORTING RADIOGRAPHY RESEARCH

College of Radiographers Industrial Partnership Research Awards
Final Report Form

Please use the tab key to move to next question

1. Principal Investigator	Emily Lewis
2. Project Title	The influence of clinical placement setting on academic achievement within an undergraduate diagnostic radiography programme
3. Amount of Award	£3925
4. Did you spend the money as indicated in your proposal (if not why)?	
Yes	
5. Did you reach your intended project outcomes (if not why)?	
Yes	
6. What are your significant findings?	
Substantive clinical placement was not identified to be a significant factor in determining student academic achievement. The only demographic or academic factor that was consistently identified as being associated with academic achievement was entry qualifications, with students with an initial first degree obtaining the best outcome, followed by students with non-standard entry, (e.g. vocational qualifications), and students with standard entry qualifications (A-levels or equivalent) being the least associated with high academic achievement in the radiography degree programme.	
7. Have you submitted the work for publication (if so where)?	
The work has been presented at the European Congress of Radiology in March 2013 and a paper is in preparation to be submitted to Radiography.	
8. Please provide an executive summary of your work (two sides of A4 maximum) **N.B. If you already have a draft or final version of the proposed publication can you please attach.**	

The influence of clinical placement setting on academic achievement within an undergraduate diagnostic radiography programme

Executive Summary

Introduction

Within undergraduate diagnostic radiography education programmes clinical placements form an integral part of the learning experience. Clinical departments can vary in terms of workflow, staffing, organisational structure, adoption of advanced and consultant practice and attitudes towards students and this has the potential to impact upon student learning. This study considered the potential influence of clinical placement on academic achievement where students were allocated to a single clinical placement provider for the duration of the 3 year course when demographic factors and baseline academic qualifications are controlled for. The secondary objectives of the study were to explore the associations between these baseline academic qualifications and demographic factors on student achievement.

Method

A retrospective longitudinal cohort design was adopted and data was compiled from student academic records and admissions data. The data compiled included aggregate mean mark for each year of the course, final degree classification, entry qualifications, gender, ethnicity, declared disability and distance of term time address from clinical placement site.

Data analysis involved multiple logistic regression modelling and two outcome measures were considered, aggregate mean mark and degree classification. A hierarchical approach to model building was employed whereby the order in which variables were entered into the model was determined by the findings of previous work. From the literature review known predictors of academic success in similar healthcare related degree programmes were identified and ranked in order of their importance of predicting academic achievement. The remaining variables which included distance between term time address and clinical placement site, and substantive clinical placement were then entered into the model. Where variables were found not to show a statistically significant effect or a large effect size they were removed from the model. In addition to regression modelling descriptive statistics were undertaken and comparisons were made using the Fisher's exact test and analysis of variance (ANOVA) where appropriate.

Results

Six cohorts of students at a single Higher Education Institution were included providing a sample size of 178 students. Students that withdrew from the course or intercalated were not included in the dataset. The sample included 10 students with a declared disability (5.6%, 10/178), 28.7% of the sample were males (51/178), and 18.5% of the sample identified as black, or minority ethnic origin (BME) (33/178), with the majority of these students identifying themselves as Asian or Asian British (75.8%, 25/33). Of the 6 clinical placement providers, 1 had a larger capacity for students with a total of 51 students over the 6 cohorts, the number of students at each of the other 5 placement providers ranged between 24 and 27.

The average aggregate mean mark was greatest in year 1 of the course at 62.3%, this dropped to 58.1% in year 2, then remained relatively consistent in year 3 at 58.3%. Academic progression was determined for each student by calculating the difference between their year 1 and year 3 aggregate mean mark and the mean difference in marks were calculated for each of the clinical placement providers and ranged between -1.7% and -6.0%. Analysis of variance indicated that these differences were not statistically significant (F = 1.358, d.f. = 5, p = .243).

A multiple logistic regression model was built for each of the outcome measures - aggregate mean mark and degree classification. Substantive clinical placement provider was not identified to be a statistically significant predicator of academic achievement. The log likelihood ratio test for this variable was performed for aggregate mean mark (likelihood ratio χ^2= 0.65, p = .986),

and for degree classification (likelihood ratio χ^2 = 4.07, p = .540).

The variables retained in the final model were, entry qualifications, gender, ethnicity and declared disability and both models were statistically significant (aggregate mean mark: Wald χ^2 = 133.10, d.f. = 7, p = .000; degree classification: Wald χ^2 = 20.06, d.f. = 5, p = .001). The overall fit of the final linear regression model suggested that the model could account for 17.8% of the variation in aggregate mean mark, which appears to be consistent with other similar studies.[1-3]

Findings suggest that students who held an initial first degree or higher, and those with non-standard entry qualifications (e.g. access to higher education qualification) were associated with greater academic achievement than those with standard entry qualifications (A-levels or equivalent). The effect of gender, ethnicity and declared disability on academic achievement appeared to be inconsistent across the two models. Females, students that identified as being BME and those with a declared disability were associated with poorer academic achievement, although the results for each of these variables reached statistical significance in just one of the regression models.

Conclusions and recommendations
Within this study there was no evidence that substantive clinical placement impacts upon student academic achievement and progression. However, as new developments within the radiography workplace are continually being made, both in terms of advances in technology and in workforce structure, research to understand the potential impact of these changes on learners will be important.

The demographic and academic variables that have been identified as being influential in determining radiography student academic achievement within this study are in keeping with the findings of similar studies conducted within other healthcare related programmes. It remains important for both HEIs and clinical placement providers to work hard to ensure that BME students and those with a disability are adequately supported to achieve their full academic potential, and to ensure equal access to learning opportunities.

This study considered data from a single HEI and therefore further work would be necessary to explore whether these findings are representative of UK diagnostic radiography courses in general. In addition, the retrospective nature of data collection meant that analysis was restricted to the data available and other potentially influential variables (e.g. student motivation or student satisfaction) could not be explored.

This study has focussed solely on a fixed clinical placement model, and further work is required to investigate the effect of clinical placement on academic achievement within radiography degree programmes that adopt a rotational clinical placement model.

References
1. Salamonson Y, Andrew S. Academic performance in nursing students: influence of part-time employment, age and ethnicity. *Journal of Advanced Nursing* 2006;55:342-49.
2. Mills C, Heyworth J, Rosenwax L, Carr S, Rosenberg M. Factors associated with the academic success of first year Health Science students. *Advances in Health Sciences Education* 2009;14:205-17.
3. McCarey M, Barr T, Rattray J. Predictors of academic performance in a cohort of pre-registration nursing students. *Nurse Education Today* 2007;27:357-64.

9. Return of application form
Please return this form to:

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