Interdisciplinary Learning Enhances Education in Biomedical Science

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Key Words: Co-curricular learning, Co-production, Education, Patient Centric

Introduction

Biomedical scientists (BMSs) play an important role in healthcare delivery, however unlike other healthcare professionals (HCPs) generally they do not attend clinical multidisciplinary healthcare team (MDT) meetings. Modern medicine embraces the value of the multidisciplinary team approach in order to maximise patient outcomes. Integration of the BMS into clinical MDTs is novel and requires careful consideration. Here we wish to share two case studies of such interactions.

Aims

Two cross-disciplinary and cross-university initiatives have been developed where students, BMSs, HCPs, researchers/academics, as well as patient representatives meet either face-to-face or virtually in an attempt to expand their knowledge, health literacy, personal development and understanding of service user impact.

Case Study 1 MeningoNI

- A multidisciplinary group:- Paediatricians, Paediatric Intensivists, Infectious Disease Specialists, Microbiologists (NHS), Allied Public Health professionals, Epidemiologists, HSC Policy Advisers, Clinical Psychologists, Meningitis charities, GPS, Academic researchers, Student representatives studying healthcare disciplines.
- examines the challenges relating to meningococcal disease in a Northern Ireland/devolved context.
- BMSs have played a key role in outlining the laboratory diagnostic pathways to non-laboratory members, guiding how pathology testing is positioned to aid optimal patient management/outcomes, vaccination interventions and laboratory safety issues.
- The seminal output of this group has been multidisciplinary interaction, creating synergies for the exchange of information amongst HCPs and patient stakeholders, regarding epidemiology, diagnosis, treatment, management, prevention and current research.1

1Meningococcal Disease in Northern Ireland - Past, Present & Future: MeningoNI Forum.

Figure 1- History “Kit Inspection” World War I soldiers standing to attention in Randalstown hut, Co. Antrim, kit laid out for inspection (1915). Photograph courtesy of the Ulster Museum BBELUM Y15526

Figure 2- Vaccination awareness amongst NI University Students2 Presentation of findings from a study conducted in conjunction with a student member of the group and Clinical Scientists in microbiology

Case Study 2 Cystic Fibrosis (CF) Study Buddies

- The role of microbiology, particularly the microbiologist, provides a real-time interface between the diagnostic laboratory and clinical medicine in the CF-MDT.
- Using the CF-MDT model, undergraduate biomedical science students have been given the opportunity to experience cross-disciplinary learning with students from other healthcare disciplines (medicine, dietetics, biomedical science, occupational therapy physiotherapy, nursing) through workshops, distance learning and attendance at CF-outpatient clinics.
- The CF-MDT mentor students who experience at first-hand the role of the laboratory and clinical management of CF patients.
- Due to infection control risks CF patients cannot meet face-to-face, therefore virtual sessions have been established, where they can meet with HCPs to discuss their disease management.
- Students have the opportunity to experience such sessions and together with HCPs and patients prepare educational materials to improve optimum healthcare delivery.

Conclusions

These initiatives allow students/BMSs to “bring-to-life the patient behind the specimen” and fully appreciate the interface between laboratory results and patient management, additionally allowing other MDT disciplines and patients to appreciate the value of laboratory testing. Furthermore, these interdisciplinary groups and co-production initiatives with the patient communities allow BMSs, HCPs and students to develop their standards of proficiency namely in relation to effective communication between service users and healthcare professionals.