Title:

Simulating complexity: Providing undergraduate students with exposure in early clinical training to the multidisciplinary management of frail older people.

Authors:

Jessica Hardisty[1], Helen O'Neil[2], Janice O'Connell[3], Rebecca Hancock[3], Rachael Lucas[3], Lindsay Parkin[1]

Affiliations:

1. Sunderland Pharmacy School, University of Sunderland, Sunderland, UK
2. City Hospitals Sunderland, Sunderland, UK
3. School of Medical Education, Newcastle University, Newcastle Upon Tyne, UK

Author for correspondence:

Jessica Hardisty, Jessica.hardisty@sunderland.ac.uk

Dale Building, City Campus, University of Sunderland, Wharncliffe Street, Sunderland, UK, SR1 3SD

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NO actual patients took part in this teaching initiative. All patient notes and the old age suit were simulations.

Consent: The two students in figure 1 have provided their consent for their faces to be shown and published (see submitted consent form)

This project aims to translate the clinical experience of the multidisciplinary frailty team into a classroom based teaching session for undergraduate healthcare students. Teaching sessions were developed which employed the pedagogical techniques of inter-professional education and simulation to replicate the complexities of managing frail older people in clinical practice.

The implications of changing patient cohorts, in particular the rising number of frail older people with multiple co-morbidities and resultant polypharmacy, for the undergraduate and postgraduate training of healthcare professionals have stimulated substantial debate. [1,2,] City Hospitals Sunderland (CHS) has been at the vanguard of developing a service to improve the management of frail older people in an acute setting and was an early adopter of the Failsafe project, which aims to improve the reliability of the care of this patient group, reduce the length of hospital stays and readmission rates.[3] Multidisciplinary frailty teams composed of doctors, nurses, pharmacists and allied healthcare professionals use the Failsafe checklist[4] to ensure full implementation of the existing evidence base when caring for older people in order to reduce the risk of adverse outcomes including pressure ulceration, infection, confusion and venous thromboembolism.

As part of the ongoing development of both the medical and pharmacy undergraduate curricula there was a desire to provide students with an opportunity to learn about the multidisciplinary management of frail older people in a way that simulates the complexities both of the patient's needs and the clinical workplace and fosters professional and empathetic attitudes. We describe a project in which members of the CHS frailty team worked with educators at the Wear Base Unit of Newcastle Medical School and Sunderland School of Pharmacy to develop and pilot an inter-professional education (IPE) session for medical and pharmacy undergraduates. The objectives of the project were:

- To simulate the complexities of the management of frail older people in the classroom

- To assess the feasibility of delivering teaching and learning focusing on the care of older people and management of their medications in the early stages of clinical training
- To assess the attitudes and acceptance of students towards inter-professional education and low-fidelity simulation as pedagogical methods for delivering teaching and learning around the care of older people
- To provide a preliminary indication of the knowledge and skills gained by students through this initiative.

When determining the focus for the clinical cases to be used the frailty team referred to the patient characteristics most typical of those seen by their service. Two patient cases were developed:

- Patient 1 was an 82 year old woman, with little social support, admitted to hospital via the emergency department after falling at home. Her past medical history included osteoarthritis, depression, hypertension, Parkinson's disease. She was prescribed numerous medications, some of which were contributing to her falls risk and/or were nephrotoxic. She was found to have an acute kidney injury (AKI) on admission.
- Patient 2 was a 79 year old man who was admitted to hospital at the request of the GP with a three day history of acute confusion. His past medical history included chronic kidney disease (CKD), heart failure, atrial fibrillation, osteoarthritis, urinary incontinence, neuropathic pain and tinnitus. He was prescribed medications with a high anticholinergic burden.

Teaching resources were produced, including simulated patient notes and other documentation such as NEWS charts and blood test results. Bags of medication (prepared to appear as if they had been brought in from a patient's home) were provided to support medicines reconciliation tasks. Students were given relevant guidelines and support materials including the Aging Brain Score.[5] Further attempts were made to simulate the complexities of caring for a frail older person and the sensory and physical impairments that can affect activities of daily living. A low-fidelity old age suit was purchased and used to

demonstrate the effects of visual, hearing and mobility impairments on medication administration (Figure 1).

At the beginning of each session students were briefed about the aims and objectives of this pilot project. Students were given tasks including reviewing the patient's history, examination and investigations to create a problem list, performing medicines reconciliation, reviewing and amending medications and producing discharge information. Tasks were designed to ensure that both pharmacy and medical students could contribute equally to problem solving, thereby simulating effective multidisciplinary working. Facilitators gave feedback on each of the tasks and provided their real-world experiences of working in the frailty team or within other contexts with older people. Students then moved to a demonstration of the old age suit (which they were invited to wear), which simulated sensory and physical impairments relevant to the cases including tinnitus, mobility restrictions and the resulting difficulties in managing medication regimens.

Feedback was obtained from 64 students who took part in this pilot project. Six themes emerged from the analysis of the feedback provided by students regarding what they felt they had gained from the session:

- Knowledge acquisition, primarily around medication use, monitoring and side effects in this patient group
- Prescribing skills, including how to determine the potential risks to the patient of a medication and balance them against anticipated benefits
- NHS practices including processes and communication around discharge from hospital
- Diagnostic and investigation skills
- Increased understanding of the multidisciplinary team
- Professional and reflective skills including a deeper appreciation of the experiences of older people and the implications of reduced mobility and/or sensory impairments

Features that students enjoyed about the sessions included working with students from another discipline, case based learning in small groups, the simulation aspects, the opportunity to apply knowledge from previous learning to the clinical cases, the relevance of the cases to both professional groups and the multidisciplinary facilitation.

This project demonstrates that it is feasible and acceptable to students to introduce the multidisciplinary management of frail older people in early clinical training. Future work will aim to address the logistical challenges including timetabling to offer this opportunity to larger numbers of pharmacy and medical students and engage other healthcare professionals in training including nurses.

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