

Innovative Training Techniques for Undergraduate Biomedical Science Trainees - Clinical Placement Expansion Programme (CPEP)



Rachel Turnbull, Martin Maley, Michelle Payne, Scott Rowan-Ferry

University of Sunderland, City campus, Chester Rd, Sunderland, SR1 3SD



Introduction

Workbased learning is a key element of training for Biomedical Science undergraduate students to enable development of key skills and knowledge required for practice and meet the criteria of the IBMS registration portfolio.

Recently across the UK a reduction in the number of clinical placements offered to university students has been observed, coupled with an increasing demand for workbased training. Current NHS pressures and increases to service delivery requirements, have played a contributing factors in reduced training capacities (Lacobucci, 2022).

In the North East of England, NHS Trust pathology laboratories reported reduced student training capacity, increased service delivery pressures and shrinking training budgets as contributing factors to training difficulties.

Simulation is a recognised technique to replicate or amplify real experiences of the real world in a fully interactive manner to complement or enhance experiential training (Gaba 2004). Its use over the last two decades in the healthcare setting to supplement real life experience has increased (Harder, 2010).

University of Sunderland were awarded funding via the HEE Clinical Placement Expansion Plan to develop an alternative method of clinical training to increase placement capacity.

An on-campus training hub was developed to deliver generic pathology laboratory training, and completion and assessment of Practitioner Training Programme (PTP) portfolio competencies, whilst providing a positive, valuable experience for students to prepare them for their clinical placements.

Working with stakeholders, the University of Sunderland academic team identified key elements of initial placement training and portfolio requirements to design a training programme which was flexible, innovative and supported with digital delivery platforms.

A blended teaching model was used incorporating multiple teaching methods. Sessions were carefully designed to resemble authentic professional and clinical situations that students will encounter in their future careers. The use of problem-based and case-based learning methodologies helped prepare learners for the real-world challenges they may encounter in their future careers (Sadka, 2021)

Students were able to align their portfolio evidence with real-world clinical scenarios, so students could apply their knowledge and skills in the practical context, demonstrating their readiness for professional practice .

Aims and Objectives

Aims

- To increase student placement capacity in the North East to support Biomedical Science undergraduate training

Objectives

- Develop a package of occupationally current training resources to deliver practical and theoretical training to provide an alternative to work-based training delivery.
- Use innovative and alternative methods to provide simulated and virtual laboratory training on campus
- Deliver and assess knowledge and skills in line with professional and portfolio competencies



Image showing the students in the simulated specimen reception.

Methods

Training content was designed and developed, following a blended teaching model to deliver on campus clinical placement training over a 5 week block in year 1 and integrated days in year 2.

Key activities included:

- Development of a LIMS system
- Expert visitors from practice delivering specialist skills
- Simulation with patients
- Pre and post analytical sample processing
- Data handling and analysis
- Role play with patients
- Case studies

Students were assessed via completion of the year 1 PTP portfolio with competency sign off after observation. Additionally, student attendance, professional conduct and performance were monitored throughout.

Placement capacity was measured by comparing number of placements offered to previous years across the region.

Qualitative feedback was gathered from students, placement providers and academic staff via questionnaire.

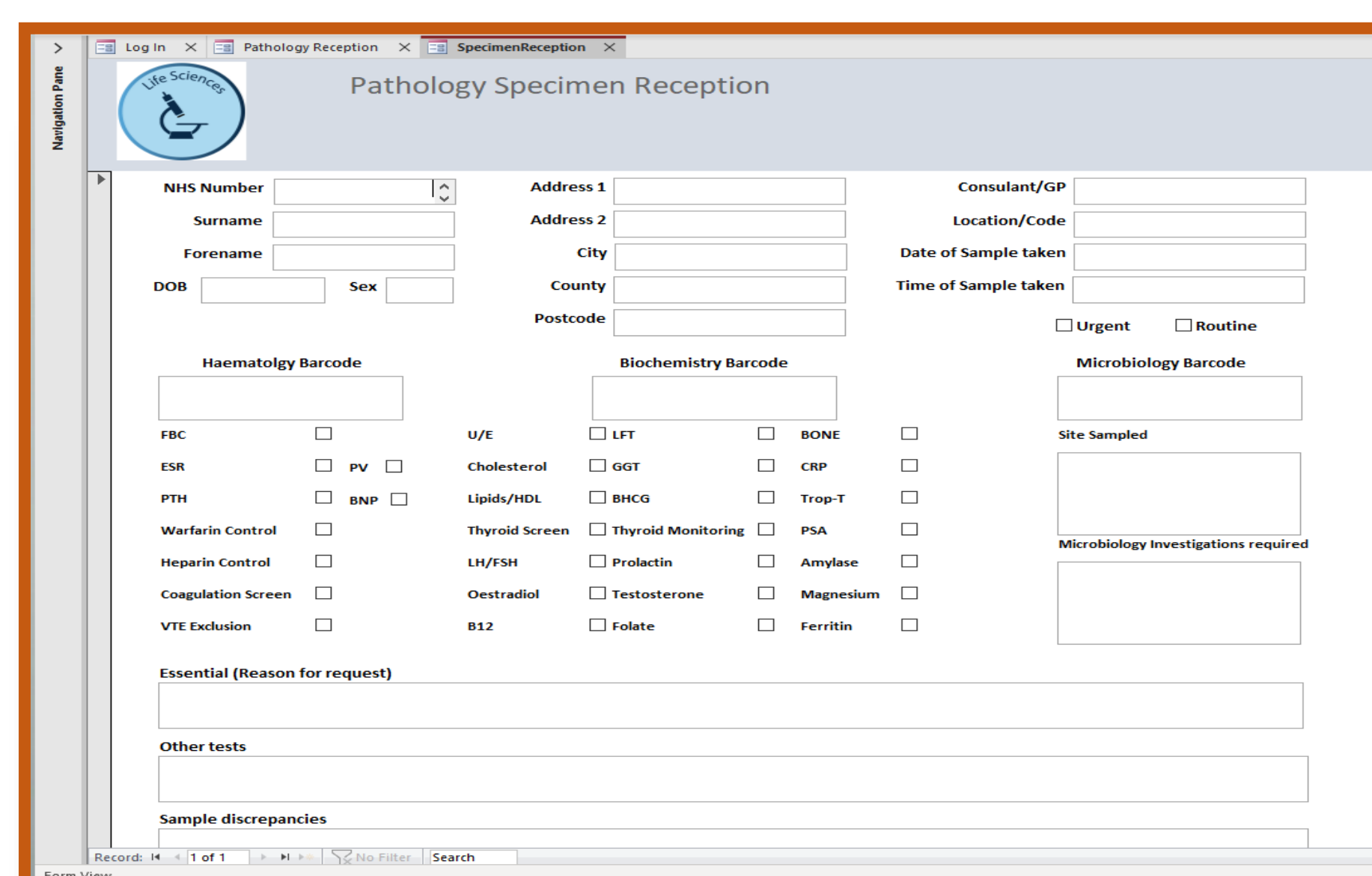


Image showing the LIMS entry screen.



Image showing the students in a Quality Control workshop.

Results

In year 1 the number of placements offered to students doubled compared to previous years, meaning more students were able to access training, complete the PTP and IBMS registration portfolio.

All students completed and passed their year 1 portfolio and workbased learning module. Student attendance was excellent, and all students received positive professional conduct and performance reports.

Positive feedback stated *"The CPEP was extremely helpful. Some of the standards in PTP2 are difficult to obtain within Cellular Pathology"* and when asked about evidence provided *"Just seen it today from practice placement. about at the right level for a beginner - good evidence of summative and formative feedback on the work. Lots of scope to show progression going forwards"*

Survey feedback from all stakeholders was mostly positive and included suggestions for future activities.

Student feedback such as *"The staff were very helpful and ensured I was on track with all my portfolio work and Overall, I enjoyed the 5-week placement, and I would definitely recommend this course to other students"* showed that there was a real sense of achievement from the students.

In year 2 the number of placements offered by placement providers dropped to the typical number pre-project.

Conclusion

University of Sunderland on-campus clinical training hub has shown that immersive experiences can successfully provide flexible access to alternative placement experiences in a new blended model of practice education. This multimodal approach delivered a diverse learning experience for students to support transmission of knowledge, skills and theory.

Placement provider feedback demonstrated that students arrived on placement with additional basic skills including experience of simulated sample reception, sample acceptance criteria and use of relevant equipment. The portfolio evidence collected during the training provision was considered to be relevant and of a good standard by placement providers.

University of Sunderland staff were overwhelmingly positive about the training hub provision. The programme was proactively shared with placement providers, to ensure that they are aware of what subject material has been covered, and the evidence already collected. This allowed mentors to tailor training plans to reflect the alternative placement.

The first year of the project saw the cohort number grow from 4 to 9. In year 2 it was hoped that there would be a further increase in placement numbers to reflect the positive outcomes of the first year, however this has not been seen in the second cohort of students.

The next cycle of the project will utilise the developed resources to support more students across all workbased learning programmes. Continued stakeholder consultation and early recruitment planning to further strengthen the project is required.

Further work with placement providers will continue to help increase placement capacity, looking to explore hurdles and barriers to training.

Alternative methods of training undergraduate biomedical scientist students should be embraced and encouraged to increase placement numbers which will help grow the graduate pipeline into the Biomedical Science workforce in line with future service delivery requirements.



Image showing the staff celebrating the end of the simulated placement.

References

- Gaba, D.M., 2004. The future vision of simulation in health care. *Quality & Safety in Health Care*, 13.
- Harder, B.N., 2010. Use of simulation in teaching and learning in health sciences: a systematic review. *The Journal of nursing education*, 49(1), pp. 23-28.
- Sadka, N. (2021), Simulation in healthcare: The possibilities. *Emergency Medicine Australasia*, 33: 367-368. <https://doi.org/sunderland.idm.oclc.org/10.1111/1742-6723.13758>

Acknowledgements

With thanks to County Durham and Darlington NHS Foundation Trust, Health Education England, The Newcastle upon Tyne Hospitals NHS Foundation Trust, North Tees and Hartlepool NHS Foundation Trust, Northumbria Healthcare NHS Foundation Trust, South Tees Hospitals NHS Foundation Trust, South of Tyne and Wear Clinical Pathology Services, and the Institute of Biomedical Science.