

Learning From Student Experience

Development of an International Multimodal Patient Safety Education Package

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ABSTRACT

Background: Patient safety is a global concern. Learning to provide safe, high-quality care is core to nursing education.

Problem: Students are exposed to diverse clinical practices, and experiences may vary between placements and across countries. Student experience is seldom used as an educational resource.

Approach: An international, European Union-funded project, Sharing Learning from Practice for Patient Safety (SLIPPs), aimed to develop an innovative online educational package to assist patient safety learning. Based on student reported data and educational theory, multiple elements were iteratively developed by a multicountry, multidisciplinary group.

Outcomes: The educational package is freely available on the SLIPPs Web site. Materials include a student reporting and reflection tool, virtual seminars, student reports data set, pedagogical game, high-fidelity simulation scenarios, scenario development and use guidelines, debriefing session model, and videos of simulations already performed.

Conclusions: E-learning enables removal of physical barriers, allowing educators, professionals, and students from all over the world to collaborate, interact, and learn from each other.

Keywords: clinical education, multidisciplinary, patient safety, prelicensure nursing students, quality improvement, simulation

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Despite some progress, 20 years after the Institute of Medicine's report *To Err is Human*,¹ patient safety remains a top global issue, and patient harm is a daily reality in health care settings around the world.^{2,3} However, in addition to being places of care delivery, health care settings are contexts

within which nurses, physicians, and other health professionals are educated. Skills, knowledge, and attitudes are learned in both academic settings and clinical contexts via various forms of internship.⁴ Learning in clinical contexts is both explicit and implicit, and not everything learned is actively or purposefully taught.^{5,6}

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Students may role model or imitate the behavior of professionals; therefore, internships in environments where there is a “poor” patient safety culture could risk perpetuation of unsafe practices.⁷ Within the clinical reality of the practice setting, students may witness, or be actively involved in, events that compromise patient safety, which are not always recognized, recorded, or reported.⁸ Although students often recognize suboptimal and potentially detrimental conditions for patient safety, they are not always able to carry out good practices or raise concerns for many reasons including fear of retaliation or a desire to be accepted by colleagues.⁹⁻¹¹

Innovation in patient safety education requires collaboration between faculty members, those in charge of clinical practice, and frontline staff to improve the safety culture in clinical teaching and learning contexts while also creating a fertile environment that ensures emotional safety for learning.^{4,12} All health professionals must feel part of this process and seek to develop a culture of safety that enables change.¹³ Interprofessional and interdisciplinary learning also offer students new insights and perspectives, encouraging the development of a range of views and potential reactions to different clinical situations, such as patient safety.^{14,15} Sharing similar situations with other countries can broaden the knowledge base of both students and educators, stimulating critical thinking and generating reflections on differently structured health care systems.¹⁶ Furthermore students’ experiences and perspectives offer valuable insights as they approach clinical practice untainted by years of health care experience.^{11,17} However, tools are needed to access and record students’ experiences, improve student learning, and heighten awareness regarding care provision and patient safety.^{4,12}

To enhance the teaching of patient safety for future health professionals, in 2016, a 3-year European project, Sharing Learning from Practice for Patient Safety (SLIPPs), was launched, cofinanced by the Erasmus+ program of the European Union (EU). The project team consisted of health care educators, frontline health care professionals, chief executive officers in health care, patient safety managers/coordinators, and experts in technology and simulation. Led by Northumbria University in the United Kingdom, 7 universities across 5 countries (Finland, Italy, Norway, Spain, and United Kingdom) were involved.¹⁸

SLIPPs aimed to promote formal and informal learning based on reflecting upon, and analyzing, real events experienced by students in clinical settings. This temporarily offers a student- and patient-centered approach to improve performance through learning and sharing, strengthening collaboration between education institutions and health care organizations. Thus, the project team developed a virtual, international, and multiprofessional, open access platform for health professional educators, students, and practitioners, aimed at facilitating

patient safety teaching and learning and based on qualitative analyses of data collected from European students.¹⁸ The open access platform (<https://www.SLIPPs.eu>, Learning Centre link) offers access to a multimodal educational package composed of a range of materials and tools with different objectives and methodologies to facilitate educational innovations and promote learning about patient safety.

The SLIPPs Educational Package

The development of the educational package elements is based on the project and qualitative data collected through the SLIPPs Learning Event Recording Tool (SLERT).¹⁸ In total, 361 students from Finland, Italy, Spain, Norway, and the United Kingdom submitted SLERT reports describing and reflecting on their learning experiences, which acted as data. The project was approved by institutional ethics review boards at all sites and undertaken according to ethical principles with their origin in the Declaration of Helsinki. All data were anonymized, and all students provided online informed consent.

Country-specific content and thematic analysis¹⁹ were undertaken in stages as groups of reports were collected, followed by a cross-country comparison and amalgamation. Data were analyzed by profession, country, year of program, and then by type of reported event (eg, procedures, pharmacological therapy, communication) and setting (eg, hospital, community). From the analysis of the experiences collected, it was possible to identify the situations most frequently reported, and, on the basis of this, prototype cases were created and then refined for use as educational material. Analysis and refinement were iterative and undertaken throughout the project. The resulting educational package materials, available at the Learning Centre (<https://www.SLIPPs.eu>), comprise 5 sections: Learning Event Recording Tool, Transnational Virtual Seminars, Learning Event Record Database, Simulation Scenarios, and Patient Safety Card Game.

SLIPPs Learning Event Recording Tool

This simple-to-use tool is underpinned by existing knowledge and theory, was systematically developed, and included pretesting, piloting, and back translation into the required languages: English, Norwegian, Italian, Spanish, and Finnish. The tool is flexible (for personal, course, or research use) and can be used via a range of platforms.²⁰ The tool promotes student description of, consideration of, and reflection about patient safety learning events that students have experienced in practice placements and can be used as both a data collection method and an educational activity.

Transnational Virtual Seminars

Four virtual seminars in varying formats, for viewing or download, were produced based on the project

materials and findings and analysis of SLIPPS Learning Event Records. The seminars cover policy and patient safety, learning safety from good practice, an example of student learning about patient safety, and a presentation from a European patient safety education conference.

Learning Event Record Database

A broad, multinational range of students' SLERT reports regarding their placement experiences of patient safety are available to consult and download from the Project Web site, as illustrated in the Supplemental Digital Content, Figure, <http://links.lww.com/NE/B26>. The selected reports are available in a range of languages to facilitate access. These reports can be used in a variety of ways, for example, by educators as case studies for educational discussions, student assignments, or seminars, which could focus on diverse issues including patient and staff safety, care pathways, incident reporting, raising concerns, learning from best practice, etc. The reports are also available for research purposes. This is an important repository for educators, students, and researchers, enabling sharing of episodes, feelings, and reflections.

Simulation Scenarios

A range of Simulation Scenario materials were developed, underpinned by recognized theory and standards for simulation.^{21,22} Best practice standards for the development and conduct of simulation scenarios were followed, which included phases of planning, scenario development, scenario conduct, and debriefing.²² English language was adopted to facilitate sharing and use of the materials internationally. Documents cover theoretical and methodological aspects, and materials include guidelines for scenario development, templates for teachers or facilitators, slides, scripts, debriefing guides, feedback sheets, a virtual storyboard, and 2 videos of role-played scenarios. As illustrated in the Supplemental Digital Content, Table, <http://links.lww.com/NE/B27>, for each video scenario, a range of documents are

available, enabling educators to tailor the materials, making them suitable for their students.

The Patient Safety Card Game

A Barrows Cards game, based on problem-based learning,²³ was developed, drawing on analysis of student reports collected using the SLERT. The deck of cards consists of a first situational card describing the initial context, with subsequent cards developing the storyline and posing specific problem situations to be resolved (Figure). The game can be used by individuals or groups, with or without facilitation,²³ and stimulates development of knowledge and decision-making skills through a nurse-patient encounter scenario.²⁴ At each problem point, students must identify an appropriate solution or strategy. On the back of each card, the correct decision to make and its rationale are described. In this way, students can apply their problem-solving skills, stimulating individual and group learning. Given the cards were originally designed to be used individually, it was decided to report both the correct and incorrect decisions or behaviors on the back of each card, along with the rationale supporting the correct choice and indications for further investigation.

Discussion

This article outlines an international, multidisciplinary, multimodal online educational package to promote patient safety education in the curricula of health professions through diversified, innovative, and engaging methodologies for the student. The package includes a range of educational tools and materials covering different topics and with nursing students and some other health care professions as protagonists, but with a single common denominator: patient safety. All tools and materials can be downloaded free from the SLIPPS Web site, where it is also possible to provide feedback (<https://www.slipps.eu>).

The package acts as a digital, e-learning adjunct for educators and learners, and thus helps bridge the gaps found among students in the health care professions in

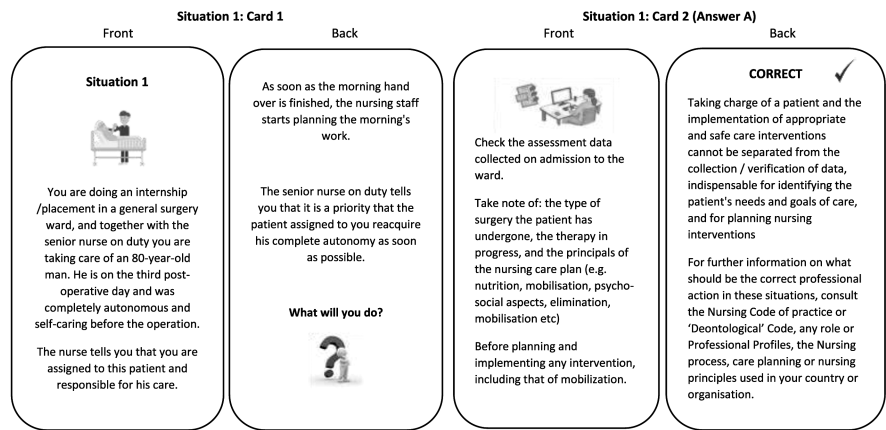


Figure. Example of Barrows Cards.

their educational curricula with regard to the teaching of patient safety.^{2,12} A literature review in the field of nursing education concluded that e-based learning facilitates a sense of control for students and encourages reflection, offering an excellent adjunct to traditional teaching.²⁵ Teaching and learning by means of digital technologies also has the potential of reaching out to a much larger audience than traditional methods while limiting the number of trainers needed. This could contribute to the cost-effectiveness of this method, although evidence is still sparse and fragmented, with further research needed.^{26,27}

There is evidence that digital education for health professional is as effective as traditional learning, as in the case of high-fidelity manikins, which have been found to be even more effective at improving psychomotor skills than traditional learning with low-fidelity manikins.²⁶ However, to adopt digital education and e-learning, nurses and health professionals need to know which are the most appropriate pedagogical methods (eg, problem-based learning), possess social and communication skills, and be aware of any ethical considerations to ensure a positive learning experience.²⁸ It is also critical that the design and the professional competencies that underpin digital and e-learning materials are carefully assessed, informed, discussed, and collaboratively agreed.²⁵ All elements of the SLIPPs educational package are the result of an EU-funded study underpinned by pedagogical theory and clinician and educator expertise, and based on real student experiences.¹⁸ The package was developed drawing on recent global health care guidelines, which promote an increasingly pressing guarantee of patient safety and quality of care.³

The international dimension of this study fosters the creation of a direct link among educators, universities, students, and, consequently, health professionals throughout Europe. This offers several opportunities at the educational level, the sharing of materials, and the rationale behind them; it facilitates networking and enables professionals and educators to adapt the online resources, use them to develop new teaching materials, and integrate them into their lessons and curricula. Moreover, it offers the opportunity to seek solutions to a global problem by joining forces, achieving a globalized sharing of educational techniques that develop clinical practices aimed at ensuring patient safety, and encouraging sharing among professionals of different disciplines, in a context where professional migration is increasing.²⁹ Patient safety is a pervasive problem that permeates health care settings worldwide³ and can spread across all levels of health care, from medication errors to mortality, from human error to lack of resources. Therefore, the nature of our patient safety educational materials is multiprofessional, enabling it to be used on a wide scale and aimed at developing interprofessional skills such as teamworking.¹⁵

The novelty of this training package is the source from which the training needs were drawn (ie, the stories written by the students, their direct experience during the clinical internship), which the students themselves considered important in terms of learning about patient safety. The sharing of the issues experienced during theoretical and practical lessons by students in the health professions could facilitate learning, creating that sense of confidence needed to develop self-efficacy, which underpins effective learning.^{4,10,30} Moreover, most of the cases reported by the nursing students underlined the broad scope of nursing across various practice settings, as well as the strong potential of the role of nurses in safeguarding patient safety because they are the health professionals who are in contact with patients on a 24/7 basis, but also with all the other health professionals.

Limitations

The main limitation of this project is linked to the intent to create materials with transversality and transferability to the many different European social and health contexts, including all the material (except a range of SLERT reports in the database that remain in the native language) being produced in English. This means that some peculiarities linked to the specific contexts and cultures of the different countries were lost. However, in the simulation scenario videos, the clinical cases and type of communication established between health professionals and patients were necessarily context specific. Moreover, the devices and equipment used to ensure the realism of the scenario were sometimes not commonly used in other countries.

An attempt has been made to overcome these limitations through constant and continuous sharing of all phases of the study with the 5 countries involved to ensure greater applicability of the material produced. Furthermore, we suggest that by highlighting differences in instruments, procedures, or communication modalities described in the materials, educators can stimulate student interest and inquiry regarding diverse cultural, national, and organizational practices, thus enhancing cultural competency—yet another issue of growing importance to patient safety in an increasingly global world.

Conclusion

The SLIPPS European Multidisciplinary Patient Safety project was planned in response to the challenge to improve European patient safety competence and education. Every 10th patient experiences harm during his or her care episode, yet the majority of adverse care episodes and harm are preventable. Stronger collaboration is needed as gaps between academic and workplace contexts seem to negatively impact upon students' learning. Therefore, patient safety education innovation needs collaboration of health care faculty

members, clinical practice leaders, and staff members to improve the culture of safety in clinical teaching and learning settings. The SLIPPs educational package focused on patient safety was based on the experiences of hundreds of students from different European countries. The innovation is not only in the outcome but also in the procedures used: the sharing of direct experiences is certainly a strong point of this study, which intends to demonstrate how the problem of safety also has an emotional impact on professionals and students. Cultural peculiarities have been taken into consideration with a view to producing materials that can be adapted to different contexts.

Creating an online, worldwide accessible platform, where you can find materials and also discuss with colleagues and other professionals about patient safety experiences, is a good starting point for improving patient safety. Furthermore, the sharing of educational materials and methodologies in the health sector could prepare the grounds for multiprofessional and international networking.

References

- Kohn LT, Corrigan J, Donaldson MS. *To Err Is Human: Building a Safer Health System*. Institute of Medicine (US) Committee on Quality of Health Care in America; 2000.
- Arora S, Tsang F, Kekecs Z, et al. Patient safety education 20 years after the institute of medicine report: results from a cross-sectional national survey. *J Patient Saf*. 2020. doi:10.1097/pts.0000000000000676
- Yu A, Flott K, Chainani N, Fontana G, Darzi A. *Patient Safety 2030*. NIHR Patient Safety Translational Research Centre at Imperial College London and Imperial College Healthcare NHS Trust; 2016.
- Steven A, Magnusson C, Smith P, Pearson PH. Patient safety in nursing education: contexts, tensions and feeling safe to learn. *Nurse Educ Today*. 2014;34(2):277-284. doi:10.1016/j.nedt.2013.04.025
- Eraut M. Non-formal learning and tacit knowledge in professional work. *Br J Educ Psychol*. 2000;70:113-136. doi:10.1348/000709900158001
- Raso A, Marchetti A, D'Angelo D, et al. The hidden curriculum in nursing education: a scoping study. *Med Educ*. 2019;53(10):989-1002. doi:10.1111/medu.13911
- Miledner LP, Schmidt A, Dimai HP. Clinicians should be aware of their responsibilities as role models: a case report on the impact of poor role modeling. *Med Educ Online*. 2014;19(1):23479. doi:10.3402/meo.v19.23479
- Ion R, Smith K, Dickens G. Nursing and midwifery students' encounters with poor clinical practice: a systematic review. *Nurse Educ Pract*. 2017;23:67-75. doi:10.1016/j.nepr.2017.02.010
- Fagan A, Lea J, Parker V. Student nurses' strategies when speaking up for patient safety: a qualitative study. *Nurs Health Sci*. 2021. doi:10.1111/nhs.12831
- Fisher M, Kiernan M. Student nurses' lived experience of patient safety and raising concerns. *Nurse Educ Today*. 2019;77:1-5. doi:10.1016/j.nedt.2019.02.015
- Jack K, Levett-Jones T, Ion R, et al. 'She would wash the patients as if she was scrubbing a dirty plate in the sink': exploring nursing students experiences of care delivery. *Nurse Educ Today*. 2020;90:104444. doi:10.1016/j.nedt.2020.104444
- Cresswell K, Howe A, Steven A, et al. Patient safety in healthcare preregistration educational curricula: multiple case study-based investigations of eight medicine, nursing, pharmacy and physiotherapy university courses. *BMJ Qual Saf*. 2013;22(10):843-854. doi:10.1136/bmjqs-2013-001905
- Murray M, Sundin D, Cope V. The nexus of nursing leadership and a culture of safer patient care. *J Clin Nurs*. 2018;27(5-6):1287-1293. doi:10.1111/jocn.13980
- Carpenter J, Dickinson C. Understanding interprofessional education as an intergroup encounter: the use of contact theory in programme planning. *J Interprof Care*. 2016;30(1):103-108. doi:10.3109/13561820.2015.1070134
- Turrentine FE, Schroen AT, Hallowell PT, et al. Enhancing medical students' interprofessional teamwork through simulated room of errors experience. *J Surg Res*. 2020;251:137-145. doi:10.1016/j.jss.2020.02.001
- Kirkman T, Hall C, Winston R, Pierce V. Strategies for implementing a multiple patient simulation scenario. *Nurse Educ Today*. 2018;64:11-15. doi:10.1016/j.nedt.2018.01.032
- Francis R. *Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry: Executive Summary*. Vol. 947. The Stationery Office; 2013.
- Steven A, Tella S, Turunen H, et al. Shared learning from national to international contexts: a research and innovation collaboration to enhance education for patient safety. *J Res Nurs*. 2019;24(3-4):149-164. doi:10.1177/1744987118824628
- Saldaña J. *The Coding Manual for Qualitative Researchers*. Sage; 2016.
- Steven A, Pearson P, Turunen H, et al. Learning about patient safety through sharing student placement experiences: development and use of SLIPPS international learning event recording tool. *Nurse Educator*. 2021.
- Jeffries PR. A framework for designing, implementing, and evaluating simulations used as teaching strategies in nursing. *Nurs Educ Perspect*. 2005;26:96-103. doi:10.1016/j.profnurs.2007.01.009
- Committee IS. INACSL standards of best practice: SimulationSM simulation design. *Clin Simul Nurs*. 2016;12:S5-S12. doi:10.1016/j.ecns.2016.09.005
- Barrows HS, Tamblyn RM. The portable patient problem pack: a problem-based learning unit. *J Med Educ*. 1977;52(12):1002-1004. doi:10.1097/00001888-197712000-00007
- Kitson AL. The fundamentals of care framework as a point-of-care nursing theory. *Nurs Res*. 2018;67:99-107. doi:10.1097/NNR.0000000000000271
- McDonald EW, Boulton JL, Davis JL. E-learning and nursing assessment skills and knowledge—an integrative review. *Nurse Educ Today*. 2018;66:166-174. doi:10.1016/j.nedt.2018.03.011
- Brusamento S, Kyaw BM, Whiting P, Li L, Tudor Car L. Digital health professions education in the field of pediatrics: systematic review and meta-analysis by the digital health education collaboration. *J Med Internet Res*. 2019;21(9):e14231. doi:10.2196/14231
- Jackson L, O'Connor A, Paneque M, et al. The Gen-Equip Project: evaluation and impact of genetics e-learning resources for primary care in six European languages. *Genet Med*. 2019;21(3):718-726. doi:10.1038/s41436-018-0132-3
- Konttila J, Siira H, Kyngas H, et al. Healthcare professionals' competence in digitalisation: a systematic review. *J Clin Nurs*. 2019; 28(5-6):745-761. doi:10.1111/jocn.14710
- Alutis C, Bishaw T, Frank MW. The workforce for health in a globalized context—global shortages and international migration. *Glob Health Action*. 2014;7(1):23611. doi:10.3402/gha.v7.23611
- Eraut M. Non-formal learning, implicit learning and tacit knowledge in professional work. In: F Coffield, ed. *The Necessity of Informal Learning*. 1st ed. Policy press; 2000:12-31.