

enhance patient adherence, intraoperatively: non-invasive technologies and sensors, decision support tools, electronic checklists, and postoperatively: devices for monitoring physical activity and mobilization, pain management and for detecting complications.

#### Conclusions

With the support of emerging technologies an individualized and safe care is ensured. Relevant further nursing research of evidence-based practice is encouraged in Europe to optimize patient outcomes.

#### References

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### S7

#### Future innovations in nursing and health care and challenges to nursing education

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#### Background

The development of new medical technologies will increase life expectancy by 30 years and reduce the death rate from cardiovascular diseases by 47%, malignant formations by 30%, and HIV infections and associated pathologies by 40%. The current education system prepares health specialists for past realities, not future ones. The competence of nurse should be developed in innovative way.

#### Materials and Methods

A literature review was done 20–24 April 2019 with the following search words: medical technologies, nursing technologies, innovations in education, and new professions in health care. One hundred fifty-one articles were found. After an evaluation based on the abstracts, seven articles were analysed.

#### Results

The challenges of the future influence the development of new roles for nurses. Those challenges include the creation of mobile diagnostic devices for self-diagnosis and early diagnosis, development and management of high-tech medical equipment, genome programming for specified parameters, establishment of personal insurance programmes according to a patient's genetic card, and ensuring communication between research, nursing, diagnosis and treatment.

#### Conclusions

The most important learning outcomes for nurses that will influence the future include the following: 1) knowledge, skills, and competencies; 2) environment, social capital, and networks; 3) personal transformation and inspiration.

### S8

#### Innovative application of a MOOC (Massive Open Online Course) within the Lydia Osteoporosis Project (LOP 3), an action research, process evaluation and implementation project

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#### Background

This presentation focuses on the design, implementation and evaluation of a Massive Open Online Course (MOOC), a complex online learning intervention within an action research, process evaluation and implementation project (The Lydia Osteoporosis Project 3).

#### Materials and Methods

The action research phase includes adaptation of a 'Caring for My Bones' online course for community settings. This 'complex learning' initiative involves learners' assimilating knowledge, skills and attitudes about osteoporosis, fracture risk, then bringing together various skills components related to promoting mobility, safe and person-centred moving and handling, and ultimately transferring this learning in their work settings (van Merriënboer & Kirschner 2013). Research participants include health and social care staff, managers and patients/ residents. Ethics and Research Governance approvals were obtained for all research sites.

#### Results

The MOOC launched January 2019. 160+ participants registered. Course duration was extended from 8 to 12 weeks. Formative comments and summative evaluations were very positive.

#### Conclusions

A well designed online learning intervention within action research, offers a way to engage staff and stakeholders in complex learning with potential for transforming practice.

#### References

- van Merriënboer J J G, Kirschner P A 2013 Ten Steps To Complex Learning. 2nd ed. Routledge, London.

### S9

#### New technologies in the practical classes of the nursing course: students' opinions

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#### Background

The growth of technological knowledge has enabled the development of digital simulators in education, promoting the understanding and integration of nursing knowledge. However, during students' nursing practice the development of instrumental skills is a key factor. The aim of this study was to identify the technologies able to assist nursing students in the development of their instrumental skills.

#### Materials and Methods

This is an exploratory, descriptive and qualitative study. The data were collected from nursing students using the focus group method after the completion of practical classes of the second semester curricular unit of the nursing course. The sample comprised 39 participants, divided into four focal groups.

#### Results

The development of students' instrumental skills requires a detailed description of the procedures, explaining each step, supported by the use of photos and videos.

#### Conclusions

Considering the findings of this study and the specific characteristics of the students involved, the design of an App would help students developing their instrumental skills.

#### Reference

- Kim, J., Park, J. H., & Shin, S. (2016). Effectiveness of simulation-based nursing education depending on fidelity: a meta-analysis. *BMC Medical Education*, 16, 152. doi:10.1186/s12909-016-0672-7.