The advanced pharmacy practice experience at the University of Oslo
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Background
The Advanced pharmacy practice experience (APPE) in European countries is to a certain extent directed by the EU directive requirement of pharmacy students having a 6 months training in a community or hospital pharmacy. However, a wide variety has been found in how the APPE is structured. Looking outside of the EU, the variation becomes even larger, in terms of duration and placement of the training. FIP has emerged around the assumption that pharmacists worldwide have a certain basis in common. Therefore, a description of the organization of APPE in one country can be a good basis for discussion APPE in general.

Purpose
To describe the APPE at the University of Oslo (UiO) and planned changes to the structure and contents in the next 2 years.

Methods
The contents of the current and future APPE are described based on the course handbook “Pharmaceutical Apprenticeship”, the course descriptions for the existing (FARM000) and future (FARM3130) course, material in the course’s web-based learning platform and planned changes to the evaluation form.

Results
At UiO, the APPE is in the 7th semester of the Master program in pharmacy and consists of approximately 21 Weeks in a community or hospital pharmacy, with periods of instruction at the University. Each student submits a mandatory folder consisting of tasks and essays in topics such as prescription evaluation, communication and ethics. Examination consists of a 1 hour multiple-choice, and a 15 minutes oral presentation of prescriptions and other problem-solving tasks.

Conclusions
The APPE at UiO is mainly a training period, with evaluation of written tasks. Planned changes include a move to the 6th semester, revision of the course contents and changing the examination form.

Daratatumub: multiple myeloma outcomes
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Background
Multiple myeloma (MM) is an incurable malignancy of plasma cell that accounts for 10% of haematological diseases. In Portugal, the incidence is estimated in 514 cases per year. In 2016 daratumumub was approved in EU in monotherapy. Later, it was also investigated the combination of daratumumub with bortezomib or lenalidomide. The addition of daratumumub to bortezomib or lenalidomide demonstrated a significant reduction in the risk of disease progression or death in patients who have at least received one prior therapy.

Purpose
This study aims to contribute with real-world data on daratumumub treatment outcomes, which are scarce.

Methods
Retrospective cohort chart review study over a 19-month period (July 2016 to January 2018).

Results
Thirteen patients with MM were enrolled with a median age of 71 years (range 60-79) and most of them men (53.8%). The prevalent type of MM was IgG (69.2%) and IgA (15.4%). Standard cytogenetic risk was observed in 76.9% of the patients and high risk in 23.1%. The median previous treatment lines were 2 (range 1-4), including Bortezomib (92.3%) and lenalidomide (84.6%). Five patients were treated with daratumumub in monotherapy (38.5%), five (38.5%) daratumumub + lenalidomide and 3 (23.1%) daratumumub + bortezomib. Four (80%) of five patients that were treated with daratumumub in monotherapy have deceased with a median of 50.5 survival days (range 30-102). By the end of the study all patients in combined therapy were alive as well the one that was in monotherapy. Across all groups the most common adverse events of grade ≥35% were: peripheral neuropathy [61.5%], anaemia [46.2%] and equally rhinorrhea, productive cough and peripheral oedema [38.5%].

Conclusions
Our study indicates that there is improved patient’s survival treated with the combination therapy as demonstrated in the POLLUX and CASTOR trials. The safety profile is comparable to those of mentioned studies.

Evaluation of oral production accuracy of Portuguese brand names of medicines
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Background
Incorrect productions of medicine names may cause medication errors. Studies evaluating oral productions of Portuguese brand names are scarce, although medicine agencies recommend that medicine names are pronounceable.

Purpose
To evaluate the influence of the phonological and orthographic structure.

Methods
Participants: 37 customers of pharmacies (older/less educated: 58.7 ±12.8 years-old; 7.5 ±3.2 years of schooling) and 30 students from a humanities faculty (younger/more educated: 25.9 ±9.3 years-old; 14 ±1 years of schooling) in the Lisbon area, 2014/15. Students were asked to read aloud 12 names (repeated 3 times). Pharmacy customers read the 12 names only once, for time limitations. Names were classified in three groups: 1) names with “y”, “k”, or “w”, letters not belonging to Portuguese native vocabulary (e.g. Propcy®), 2) names not written according to the Portuguese orthographic rules (e.g. Qutenza®), and 3) names complying with Portuguese orthography (e.g. Claritine®). Names were sequentially presented in a screen and audio recorded. A
trained linguist transcribed/coded 1495 outputs. Only adults capable of performing the task were enrolled. Non-parametric Chi-square (p<0.05) was applied.

**Results**

Overall, less educated have produced significantly more errors than more educated ones ($X^2 = 92.875$, p<0.001); 31% vs. 14.4% incorrect productions. Percentage of correct productions in canonical vs. names with letters “y”, “K”, or “W” vs. non-canonical names: more educated (90.3% vs. 82.6%) vs. 75.3%), and less educated participants (64.6% vs. 68.5% vs. 44.3%).

**Conclusions**

Less educated participants performed worst, suggesting that this population might be more vulnerable to medication errors. Brand names not complying with regulations requirements seem to favour production errors. More investigation is needed towards creating linguistic norms to develop/adapt suitable medicine names.

**Poster006**

**Conceptual approaches to the sustainability of healthcare services and their application to pharmacy**

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**Background**

Implementation research aims to develop methodologies to incorporate evidence-based innovations into practice. Following implementation, accomplishing sustainability of the innovation is critically essential to ensure the long-term continuity of services. A number of conceptual approaches to the sustainability of evidence-based innovations in healthcare exist. These approaches aim to guide the process, determine factors influencing and form part of the evaluation. However, the sustainability of innovations in pharmacy services is an area yet to be studied. Therefore there is a need for a conceptual framework to underpin the development of sustainable professional pharmacy services.

**Purpose**

To evaluate the conceptual approaches for the sustainability of innovations in healthcare in order to develop a framework specific for professional pharmacy services.

**Methods**

A systematic literature search was undertaken in February 2018 in PubMed, Scopus and Web of Science to identify conceptual approaches/theoretical frameworks for the sustainability of healthcare innovations. All the titles and abstracts were screened and potential articles identified. A table was created for data extraction (type and characteristics of conceptual approach, innovation used, setting, target user).

**Results**

From the 3033 articles screened, 2585 articles were eliminated after title and abstract screening. 448 full-text articles were reviewed providing 68 sustainability conceptual approaches. The proposed framework for pharmacy services includes two major components: the service and the context domains with factors which moderate the sustainability of the pharmacy service (e.g. adaptability, funding, leadership, and training). The context domains include individuals (e.g. pharmacy staff), Pharmacy, Local setting (e.g. healthcare professional, stakeholder) and System. Continued evaluations of the service components delivery are crucial to prove sustainable service effectiveness.

**Conclusions**

Monitoring the service progress is essential to identify the factors affecting its sustainability, allowing their adaptation to the change in circumstances. The proposed framework will guide pharmacy practice researchers and practitioners to evaluate the sustainability of professional services previously implemented.