tries were statistically more likely to have a documented name, while medical entries were more likely to have a documented time (p=0.05). Moreover, it was noted that out of 500 beds included in the audit, 8.6% (n=43) had no entry as the patient was not seen by a doctor.

Conclusion: The results highlight inconsistencies in documentation by doctors at MDH, which can deduct from patient safety and accountability. This highlights the need for a local guideline outlining documentation standards expected from doctors at MDH.

P15.19

Patients' willingness to cross-border healthcare: the Maltese perspective

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Introduction: The purpose of this study is to identify and analyze factors influencing willingness to access cross-border healthcare by evaluating patients' behaviours, attitudes, experiences and expectations.

Methods: This study employed a quantitative cross-sectional approach surveying outpatients of a general hospital. Quota sampling was used to recruit patients who have never experienced treatment abroad and patients who did experience treatment abroad. Univariate analysis was used to analyse the data.

Results: The respondents were found to be willing to access cross-border healthcare. Age (p-*value*=0.006), education (p-*value*=0.008), language literacy (p-*value*=0.000), literacy on cross-border healthcare (p-*value*=0.000) and financial resources (p-*value*=0.000) were found to have a significant association with willingness to access cross-border healthcare. Gender, employment status, and occupation were not found not to be significantly associated with willingness to access cross-border healthcare. The respondents would base their decision to seek treatment abroad on the GPs/specialists referral and they are willing to seek treatment abroad for specialised care.

Conclusion: The respondents are more likely to access treatment abroad for specialised care rather than to by-pass long waiting times in Malta. The study is context specific. Education of the public on the differences between specialised care programme and patients' rights under EU directive should be implemented with GPs/specialists playing a major role. The EU policy on cross-border healthcare should consider focus on country specific factors when EU citizens access cross-border healthcare.

P15.20

How do medical students study anatomy?

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Introduction: The purpose of the study was to examine how Year 1 and 2 students study gross anatomy and its relationship to their socio-demographic features.

Methods: All Year 1 and 2 students were asked to respond to a short anonymous online questionnaire.

Results: 177 students responded (59.9% of Year 1 and 40.1% of Year 2), of whom 25.4% had a previous degree. Almost 80% of those with a previous degree found lectures to be useful as a learning method compared with 68% of those without (p<0.05). Almost two thirds of those without a degree learned best by working on their own time in the dissection hall compared to just under half of those without a degree. Critical thinking sessions and writing and answering quizzes were found to be more useful by students without a degree than those with (72% *vs* 62%; 82% *vs* 72% respectively). Significantly more Year 1 students found video dissections useful as a learning tool (88% Year 1 *vs* 67% Year 2). Overall, significantly more year 1 students feel more time should be dedicated to lectures (35% *vs* 24%) and working alone in the dissection room (73% *vs* 51%) compared to Year 2 students. There were no significant differences between male and female students in either year.

Conclusion: Degree students appear to be more independent in their approach to learning anatomy, while those without a degree (ie. most local students) preferred critical thinking and other more active learning approaches.

P15.21

Usefulness of online self-learning tutorials and quizzes for medical students at the University of Malta

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Introduction: Self-directed learning, e-learning, and formative assessment in the form of online quizzes, have been shown to be associated with enhanced learning and improved test scores among medical students. This study aimed to assess the perceived usefulness of online self-learning tutorials and formative assessment (online quizzes) for medical students.

Methods: A questionnaire and online tutorial on thoracic imaging were distributed to medical students who had prior exposure to studying thoracic anatomy.

Results: All respondents had previously utilised an online learning tutorial and all of them had found it helpful (47% moderately helpful; 53% very helpful). The majority found the supplementary thoracic imaging tutorial to be moderately to very helpful in: understanding thoracic anatomical relations (81%); learning thoracic anatomy (78%); revising thoracic anatomy (86%); and, application of clinical relevance (81%). Nearly all students (97%) reported the desire to utilise similar online tutorials to study other topics. In addition to taking advantage of online tutorials, 92% of respondents had utilised online quizzes with 79% finding them moderately to very helpful and only 21% finding them slightly helpful.

Conclusion: Most medical students at the University of Malta believe there is benefit to utilising online self-learning tutorials and quizzes to enhance learning. Greater efforts should be made to increase the availability and quality of these self-learning tools in order to meet the increasing demands of our crowded curricula.

P15.22

Unskilled and unaware: self-assessment of first and second year medical students in anatomy spotting examinations

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Introduction: Accurate self-assessment and insight into limitations are an important part of medical training. The aim of the study is to investigate the ability of low and high performing students in judging their performance in their practical anatomy exams.

Methods: At the end of the practical exams in 2014/15 Year 1 and 2 students were asked to estimate the mark they felt they had obtained. The difference between actual and perceived marks was further analysed based on gender, nationality and year of study.

Results: A statistical significant difference of 9.9 and 12.4 marks was found between actual and perceived results for first and second years respectively. High performing students estimated an average of 18.4 marks below their actual mark, compared to 2.5 marks for low performing students. A statistically significant difference of 13.1 marks was found for female students compared to 5.6 marks for male students. There

was no difference based on nationality and between first and second year students.

Conclusion: The lack of insight of low performing, especially female students is cause for concern and may indicate that additional training is required. It remains to be determined whether this lack of insight also extends to written examinations in this and other disciplines as well as clinical skills. It is unclear whether poor performers over-estimate their performance because their relative incompetence deprives them of the skills needed to recognise their deficits.

P15.23

Attitudes of medical students in Malta to the teaching of embryology and histology

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Introduction: Embryology and histology are two aspects of basic biomedical sciences. The aim of this study is to investigate the attitudes of pre-clinical students, who are undergoing tuition in the basic biomedical sciences, towards these two subjects.

Methods: The data was collected by means of a survey. Apart from filling in their gender, age, nationality, year of study, participants ticked statements regarding embryology and histology that they completely agreed with.

Results: 50.9% of the students participated in this survey. Some interesting findings from the data collected were either regarding both histology and embryology combined, such as the fact that only 3.2% believe that embryology is one of the most clinically relevant basic sciences, while 4.3% believe that histology is one of the most clinically relevant basic sciences. Furthermore, only 25.9% of the participants believe that a doctor would be of limited effectiveness without embryology, while 37.8% believe the same for histology. Interestingly, 3.8% of the students believe that Western medicine can do without embryology, like Eastern or alternative medicine, while 4.3% believe the same for histology. The study also discovered some differences between the students' regard for embryology and that of histology. For example, 45.9% of the students believe that although embryology is interesting, it needs selective understanding in the clinic, while only 31.9% believe the same thing for histology.

Conclusion: In conclusion, the study has shed further light on how medical students regard histology and embryology with the rest of their medical curriculum.

P16.01

Implementation of pre-emptive pharmacogenomics in the Maltese population

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Introduction: Genetic variation between individuals provides predictive information on treatment effectiveness and risk of toxicity in commonly used pharmaceuticals. Pharmacogenomic approaches are increasingly being used to assist in the rationalization of drug use, and hence improving the quality of personalized health care and reducing the costs of the overall healthcare expenditure.

Methods: 45 DNA samples from healthy volunteers residing in Malta were analyzed with the DMET+ platform (Affymetrix, Santa Clara, CA, USA), including a broad coverage of 1,936pharmacogenomic markers in 231 relevant pharmacogenes on a single GeneChip platform. Data analysis included principal component analysis, ancestry analysis and shortlisting of the most relevant actionable pharmacogenomic biomarkers.

Results: Although the Maltese population clusters together with the Caucasian population, as expected, the allele frequencies for several pharmacogenomic markers, in the Maltese population are significantly different compared to those observed in the Caucasian population. For example, the allele frequencies observed for several CYP2D6 alleles in the Maltese population are different compared to those observed in Caucasians, while although the TPMT*3C allele frequency is 3% in the Caucasian population, this allele is completely absent in the Maltese population.

Conclusion: These findings warrant further investigation during the Phase II of the project that will soon commence. Overall, individualization of drug therapy is the ultimate goal, providing the rationale for implementing pre-emptive pharmacogenomics in healthcare provision in developing countries in Europe and worldwide.

Disclosure: The DMET+ funding was provided by Affymetrix through the PGENI initiative.

P16.02

Design of novel inhibitors of *Mycobacterium tuberculosis* replication using azole antifungals as leads

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Introduction: Mycobacterium tuberculosis (Mtb) continues to be a source of significant morbidity and mortality due to the constant emergence of resistant strains. Azole antifungals have been found to exert an inhibitory activity on Mtb CYP121 enzymes, compromising its viability; and were used in this study as leads for the *in silico* design of novel agents capable of superior inhibitory activity at this locus.

Methods: Protein Data Bank (PDB) crystallographic deposition 2IJ7 describing the coordinates of the Mtb CYP121 enzyme: fluconazole complex was selected as a template. Fluconazole was extracted computationally from the Mtb Ligand Binding Pocket (LBP), and its affinity for its cognate receptor was calculated *in silico*. The two triazole rings and the hydroxyl group inherent to azoles constituted the pharmacophoric scaffolds onto which novel moieties could be added for the construction of novel structures.

Results: Novel high affinity structures capable of binding to the Mtb LBP with high affinity were designed and segregated into families according to pharmacophoric structure and Lipinski rule compliance.

Conclusion: The designed molecules exhibiting the optimal combination of affinity and Lipinski rule compliance are suitable for further optimisation and *in vitro* validation studies. The entire molecular cohort may be included into chemical libraries for high throughput screening.

P16.03

Design and optimisation of novel lead carbonic anhydrase inhibitors for the management of neoplastic disease.

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Introduction: Neoplastic disease progression results in a scenario in which tumour cell vasculature is not sufficient to maintain homeostasis. Compensatory mechanisms have consequently evolved, an example of which is the over-expression of Carbonic Anhydrase IX (CA (IX)) which, through reduction of intracellular CO_2, reduces hypoxia and promotes metastasis. This study uses CA (IX) as a target for the design of novel inhibitors.

Methods: Protein Data Bank crystallographic deposition 3IAI describing the holo acetazolamide: CA (IX) complex was used as a template. The affinity of the complex components was