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.

**P15.20 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. Almost two thirds of those without a degree learned best by working on their own time in the dissection hall compared with 68% of those with a degree (p<0.05). Almost two thirds of those without a degree learned equally as well by working on their own time in the dissection hall compared with 68% of those with a degree (p<0.05).

**Conclusion:** The respondents are more likely to access cross-border healthcare by evaluating patients’ behaviours, attitudes, experiences and expectations.

**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.

**P15.01**

**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*c 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 (Mtbtuberculosis) 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 onMtbtuberculosis 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 de-position 21j8 describing the coordinates of the Mtbtuberculosis enzyme: fluconazole complex was selected as a template. Fluconazole was extracted computationally from the Mtbtuberculosis 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 scaffold onto which novel moieties could be added for the construction of novel structures.

**Results:** Novel high affinity structures capable of binding to the Mtbtuberculosis 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 CO₂ 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 3JAI describing the holo acetazolamide: CA IX complex was used as a template. The affinity of the complex components was