**Year 1 PBL Cases 2012 - 2013**

**Case 1: Fodder for thought**

**Learning Objectives**

1. Understand the PBL process, as used at Imperial.
2. Describe the newborn bloodspot (‘heel prick’) test and the conditions it tests for.
3. Describe the difference between screening tests and diagnostic tests.
4. Derive a differential diagnosis for illness following fasting.
5. Identify MCADD (medium chain acyl co-A deficiency) as the likely diagnosis.
6. Explain how the genetic defect in MCADD leads to the clinical symptoms.
7. Outline the laboratory tests to confirm the diagnosis of MCADD.
8. Discuss the epidemiology of MCADD.
9. Construct a possible pedigree from a family history of inherited disease.
10. Describe simple Mendelian inheritance in terms suitable for a patient who has little prior biological knowledge and be able to describe to him/her how to predict the risk of inheritance of a recessive disease.
11. Suggest possible treatment, lifestyle changes and management and the implications for the family in newly diagnosed MCADD.
12. Discuss the ethical issues related to screening for genetic conditions.
13. Discuss the sources of information available to patients.
14. Practice the communication skills required to give test results over the phone.
15. Describe how research into MCADD testing led to it being incorporated into a neonatal screening programme.

**Case 2:** **‘It’s just a Virus’**

**Learning Objectives**

1. To learn how to diagnose viral and bacteriological infections of the upper and lower respiratory tract based on symptoms and signs.
2. To evaluate management options for the cases described in the scenarios, including the appropriate use of antibiotics and onward referral.
3. To explain to a patient why antibiotics are not routinely needed to treat a viral infection.
4. To explain how the ‘common cold’ produces symptoms and signs.
5. To be aware of important vaccines for preventing respiratory infections: influenza and pneumococcal vaccines.
6. To consider the role of doctors in understanding how patients explain their illnesses and, conversely, the importance of challenging health belief.
7. To locate sources documenting the incidence and prevalence of upper and lower respiratory tract infections (viral, bacterial and other).
8. To know when and how to search for scientific evidence e.g. NICE guidance and guidelines from learned societies, to support management decisions

**Case 3: In case of emergency**

**Learning Objectives**

1. Describe what the Glasgow Coma Scale (GCS) is and also, in detail, the way the Glasgow Coma Scale is used to assess the patient.
2. Explain how aspirin acts as an analgesic and anti-inflammatory.
3. Describe the most likely presenting symptoms for an extradural haematoma.
4. In the case of an extradural haematoma, describe the likely cause, complications and treatment.
5. Explain which of aspirin’s effects might worsen an extradural haematoma.
6. Demonstrate how brain stem tests are performed.
7. Debate the ethical issues to be considered for organ transplantation.
8. Discuss sources of support for a friend or relative

**Case 4: Counterblaste**

**Learning Objectives**

1. Explain how the symptoms reported relate to a diagnosis of either lung cancer or TB.
2. Apply an understanding of the anatomy of the lung to the examination signs reported.
3. Explain the different types of diagnostic tests used in the diagnosis of lung disease, with particular focus on the role of imaging.
4. Describe the most appropriate histological tests to confirm the diagnosis and exclude others.
5. Discuss the role of smoking in the aetiology of lung cancer.
6. Review the presentation and treatment of TB.
7. Review how the conditions encountered by doctors have changed since the 1950s.
8. By using resources in museums, explore how diagnosis and treatment in medicine has changed in the last 60 years.
9. Understand the different types of vaccination available and the purpose of immunisation.
10. Debate the ethical issues surrounding vaccination.
11. Gain experience critically appraising popular or academic scientific articles.
12. Create an item of media to inform a target audience.

**Case 5:**  **Written on the Cusp of Mortality**

**Learning Objectives**

1. Formulate a differential diagnosis and explain why aortic stenosis is the most likely.
2. Explain what causes a murmur.
3. Describe the importance of aortic stenosis in terms of its prevalence in the UK.
4. Recognize the major causes of aortic stenosis and how these have changed over time.
5. Explain how without intervention aortic stenosis can lead to a spiral of deterioration leading to end stage cardiac failure.
6. Explain how aortic stenosis can lead to angina, pre-syncope and syncope, and congestive cardiac failure.
7. Explain the basic principles of the management of aortic stenosis and cardiac failure.
8. Explore some brief descriptions of current research directions for these conditions which are ongoing at Imperial College.
9. Discuss choices available to patients regarding end of life care.
10. Discuss the range of emotional responses of relatives to bereavement.

**Case 6: Olympic Dreams: citius, altius, fortius**

**Learning Objectives**

1. Describe how the sexes differentiate during development.
2. Describe how the hypothalamo-pituitary-gonadal axis is normally regulated.
3. Explain the biological mechanisms of androgen insensitivity syndrome.
4. Describe how androgen insensitivity syndrome is diagnosed and treated.
5. Describe how an X linked recessive disorder is inherited and how phenotypic effects manifest.
6. Discuss the psychological issues involved in counselling intersex patients and dealing with infertility.
7. Discuss and evaluate the ethical and legal implications of andogen insensitivity syndrome and other intersex conditions.
8. Set themselves a series of goals for their second year PBL performance.