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CURRENT AFFAIRS – BBC NEWS | APPLE NEWS | HEALTHCARE

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CRITICAL APPRAISAL

NHS STRUCTURE

UNDERSTANDING DISEASES IN MEDICINE

MEDIC MENTOR'S STUDY GUIDE

FEBRUARY

2020

SITUATIONAL JUDGEMENT

PBL CASES: MEDIC – FEMUR FRACTURE
VET – FRACTURE DUE TO OSTEOSARCOMA
DENTIST – GENERALISED PERIODONTITIS

ALSO INCLUDED:

THE DEBATE
CURRENT AFFAIRS
UCAT/BMAT QUESTIONS
CRITICAL ANALYSIS OF AN ARTICLE
THE IMPORTANCE OF YOUR PORTFOLIO

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"The Study Guides provide aspiring doctors, dentists and vets with a free long-distance learning programme to develop wider knowledge and transferrable skills.



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Work through it individually or as part of a medics society in your school!

The guides can be worked through individually, or as a group and can form the basis for meetings run by school medics societies.



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Dr Quinn

President of Medic Mentor

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Bodily Autonomy in
Children and Young
People

MENTOR MAGAZINE,
AUTUMN/WINTER 2020

MOTIVATING

MEDICAL

MINDS





Suitable for students from Year 10 or S3 upwards (and parents)

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**TAKE YOUR FIRST STEPS TOWARDS
A CAREER IN**

Medicine

Vet Med

Dentistry

Believe me, as a Doctor myself, having been through the journey of medical school applications and all the way through to working life, I know it is not an easy path, but it is most certainly an enjoyable, diverse and rewarding one!

First and foremost, congratulations! To be considering the prospect of a career in medicine, dentistry or veterinary is an incredible accolade.

Getting into a competitive healthcare course requires a great degree of dedication, in addition to showing an early aptitude for the profession, i.e. a few sparks of potential that will one day make a healthcare professional.

We hope that you enjoy the study guide and we encourage you to read the reviews and thoughts published in the Medic Mentor magazine.

Good luck!

FOREWARD

BY DR LAUREN QUINN, MBChB, BMedSci, PRESIDENT OF MEDIC MENTOR. EMAIL: PRESIDENT@MEDICMENTOR.INFO TWITTER: [@MMDRQUINN](https://twitter.com/MMDRQUINN)

This monthly study guide provides the ingredients to build on your early aptitude, helping you to develop your skills in problem-based learning, debate, critical appraisal and ethical reasoning, which form the very foundations of a successful career in the health sciences, from medicine, to dentistry to veterinary medicine. Harnessing these skills early will not only equip you well for the application process and make you stand out from the crowd, but will serve you all through your degree and future careers. The more you put into this study guide, the more you will get out. We strongly encourage you to use this study guide in a group setting, to work together through the chapters and build on your skills as a team. However, the monthly study guide will also be accompanied by a monthly webinar by professionals in the sectors of medicine, dentistry and veterinary medicine, to broaden your horizons and provide context to the cases.

The most successful Medic Mentor students get involved in everything! Don't hesitate; put yourself outside of your comfort zone and your confidence will grow! Apply for competitions, attend events, read as much as you can, and follow the Study Series!

Problem Based Learning Case:

Problem based learning (PBL) is a popular method, currently used by most health professional courses in the UK, in one form or another. The aim of PBL is for the learner to read through a complex and broad series of information, to identify areas of interest and areas they would like to explore further, in order to enhance their knowledge of specific topics, in a self-directed fashion. Through this series, we encourage prospective students to gain their first insights of PBL; read the case individually or as a group, look up what you don't know and scrutinise topics of interest. The questions provided offer ideas of topics to explore and are written in three streams for aspiring medics, dentists and veterinarians; focus on all three or simply what interests you!

THE MEDIC PBL CASE

FEMUR FRACTURE

Mrs Doreen Smith is 80 years old and has been living on her own in a flat in Leeds for five years after the death of her husband, due to a heart attack.

She has always been an active person, having done track athletics since she was a child, and takes the time to go on short walks or runs.

However, she has been that lonely since her husband's passing and the only social interactions she tends to have with others, are passing conversations with her neighbours.

She is particularly proud of her small garden and has been carefully tending it for years. Her growing collection of larkspur is her pride and joy.

However, as Doreen was reaching up to prune her magnolia one day, she lost balance and fell awkwardly on her hip, and was lying there for several hours before one of her neighbours spotted her and called an ambulance.

On admission to the hospital, the doctors feared that she had a fractured neck of femur, which was confirmed through medical imaging. Although she fell on her hip, she also noted lower back and calf pain.

The doctors took a blood test and they were worried about the raised levels of creatine kinase, white blood cells and inflammatory markers. When she passed urine, it was reddish-brown in colour. They made a diagnosis of rhabdomyolysis.

To treat Doreen's fracture, a hemiarthroplasty was required and she went under general anaesthetic.

One of the drugs used to intubate her for the procedure was suxamethonium chloride; a short-acting, depolarising muscle relaxant.

The treatment went well and Doreen looks to make a full recovery, but before she was discharged, she was visited on the ward by an occupational therapist, to discuss her living situation, and a social worker.

Medic Mentor Magazine

The Mentor magazine offers students a chance to have their work published.

If you think you can write an essay, article, reflection or opinion article email our magazine team.

Medicine

Vet Med

Dentistry



Write for the
**MENTOR
MAGAZINE**

e-mail: mag@medicmentor.org

HERE ARE SOME THOUGHTS TO HELP YOU GUIDE YOUR DISCUSSION:

1. How do the gross and cellular structures of muscle change with age and how does this make the risk of falls more likely?
2. How does the structure of bone and muscle respond to an active lifestyle?
3. Describe the likely signs of a #NOF and why could it be life threatening?
4. What type of imaging would have been used to diagnose the fracture and why?
5. What is rhabdomyolysis and why would the doctors be concerned about it?
6. What is the role of creatine kinase and why does its presence in the blood suggest rhabdomyolysis?
7. What effect does suxemethonium chloride have on synapses at the neuromuscular junction and why does this result in paralysis?
8. What is the role of an occupational therapist and what could they do to help Doreen?
9. What is social prescribing?
10. What are the health impacts of loneliness in the elderly and how could social prescribing help?
11. What social care options are available for the elderly in your area?
12. Does social care vary a great deal in different parts of the country?



The new MENTOR
magazine coming Febuary.
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THE MOST GOOD YOU CAN DO

Reaching the end:
Should families get a say in
end of life care?

From day one to the end of year
five, your family will think of

CONN

THE IMPORTANCE OF YOUR PORTFOLIO

Your portfolio of achievements are an important part of your evidence when applying to university and jobs alike.

It demonstrates a level of commitment and organisation.

It is also a physical representation of what you have achieved and what you are capable of.

Your GCSE and A-Level years can see you collecting awards, certificates and competition wins, from all manner of curricular and extracurricular activities.

From within your school and out in your community, make sure you participate in a wide variety of events to bolster your collection.

All of these achievements will come with some form of proof of your participation, so make sure you document it.

Here are some ideas when it comes to building your initial portfolio:

- **Get yourself a folder to keep all of these papers, but remember to choose something that looks professional.**
- **Many of the awards and certificates you will get will be digital. Print them off as soon as you can, so that they don't get lost amongst your other emails, and add them to your folder. Use poly pockets to protect them.**
- **Many awards and accomplishments may not come with a certificate, for example, if you have been featured in a newspaper, an online article, newsletter, or school bulletin. You can still evidence these by printing off the information and adding it to your portfolio. Also ask the relevant teachers to create a certificate for you.**
- **Your GCSE and A-Level certificates are also going to be a big part of your starting portfolio, so don't forget to collect them from your school on your results days.**
- **Remember when taking part in work experience or volunteering to keep a diary of what you do day-to-day, keep in mind the skills you will need to develop when becoming a doctor and reflect on this in your diary. Condense this down and add it as evidence. In conjunction to this, ask to have an assessment of your time spent working and volunteering.**

THE **VET** PBL CASE

FRACTURE DUE TO OSTEOSARCOMA

You receive a call to your out-of-hours emergency service from Mr Glenn about Magna, his 4 year old male neutered Rottweiler, who has jumped off the sofa and is in a lot of pain.

He arrives and is screaming in pain, and is 10/10 lame on his left forelimb.

You give analgesia in order to be able to examine him, but it quickly becomes apparent that he needs an x-ray. He has an area of pain focalised on the proximal third of the humerus.

The radiographs shows an area of mixed radio-opacity with an oblique fracture.

You suspect this may be a pathological fracture of brittle bone due to a condition called osteosarcoma.

HERE ARE SOME THOUGHTS TO HELP YOU GUIDE YOUR DISCUSSION:

- 1. How would you recognise or define 10/10 lameness?**
- 2. How would you definitively diagnose osteosarcoma?**
- 3. What are Magna's treatment options?**
- 4. What is the prognosis for Magna?**
- 5. Are there any signalments (characteristics such as age, sex, neutering status or breed) which make dogs more prone to osteosarcoma?**
- 6. Explain metastasis – where are osteosarcomas likely to metastasise to?**
- 7. Would you do anything differently if you saw metastasis on Magna's thoracic radiographs?**

Lead by Dr Olivia Coldicuff, Dr Siobhan Chien and Dr Priya Chohan Vice
Presidents of Leadership

MEDICAL LEADERSHIP PROGRAMME

Do you have what it takes to become a future NHS leader?
Apply directly on the Medic Mentor website: [medicmentor.co.uk](https://www.medicmentor.co.uk)

Medicine

Vet Med

Dentistry



THE DENTIST PBL CASE

GENERALISED PERIODONTITIS

Amy, a 45 year old female is quite distressed as some of her teeth have fallen out and the remaining teeth are very mobile.

She has not been to the dentist for 20 years as she feels it is a waste of time.

Out of fear of losing all of her teeth, she signs up as a patient at her local NHS dental practice and books an appointment.

The nurse calls Amy into the dental surgery from the waiting room. Dr Wilson introduces himself and asks Amy to take a seat in the dental chair.

Firstly, Dr Wilson takes a history.

Amy explains that she is worried about losing all of her teeth because over the past 6 months, 3 of her teeth have fallen out whilst eating and the rest are very wobbly.

She says that she has not been to see a dentist since she was 25 years old, as every year she would have a check up and they would say that her teeth were completely healthy, so she thought it was pointless.

She has not had any previous dental treatment.

Amy notifies Dr Wilson that she was diagnosed with type 2 diabetes 5 years ago, which she finds hard to control. Amy would be classed in the Obese category for her weight.

She tells Dr Wilson that she has smoked 15 cigarettes per day for 15 years, which she uses as a stress reliever.

When asked about her oral hygiene routine, Amy says she brushes her teeth once a day for 1 minute, doesn't use floss or mouthwash.

Next, Dr Wilson asks whether Amy is happy for him to examine her. She agrees and so he proceeds to check that the tissues of her face and neck are normal by looking in her mouth.

Dr Wilson carries out an extra-oral examination, intra-oral examination and charts Amy's teeth.

He then tells Amy that he needs to use an instrument to poke in her gums to check how healthy they are, but says that at any point, if she wants him to stop, all she has to do is raise her hand.

Amy agrees.

Dr Wilson uses a WHO Probe to record a BPE of 444/444.

Based on this, Dr Wilson decided to take full mouth periapical radiographs to aid the diagnosis.

Dr Wilson Diagnosed Amy with: Generalised Periodontitis stage 4 Grade B - Currently

Unstable - Risks: _____

Dr Wilson explains the diagnosis to Amy in a way she would understand and answers any questions that she has.

He explains her the treatment options which include:

1. No treatment (not advised, as the disease will just get worse)
2. Extraction of severely mobile teeth, an immediate denture to replace any missing teeth, full mouth scale and root surface debridement, then permanent denture once the oral environment is stable.

HERE ARE SOME THOUGHTS TO HELP YOU GUIDE YOUR DISCUSSION:

1. What is the structure for taking a history in dentistry?
2. What is type 2 diabetes? What is likely to have contributed towards Amy developing type 2 diabetes?
3. What advice would you give Amy if she is struggling to control her type 2 diabetes?
4. How does smoking affect Amy's general health and oral health?
5. What is a BPE? How is a BPE recorded? What do the different BPE codes mean?
6. What is a periapical radiograph? What is it used for?
7. What is periodontitis?
8. What is the primary cause of gum disease?
9. What risk factors for gum disease does Amy have?
10. What oral hygiene advice would you give to Amy to improve her oral health?
11. What other advice would you give her to improve her gum health?
12. What is a full mouth scale and root surface debridement and how do they aim to improve gum health?

QUICKFIRE QUIZ

FRACTURES

Time for a quickfire quiz, this section is here to help with your revision for the multitude of topics you will be learning at school, these questions will be a mixture of medical, social and scientific questions. See how many you can answer on your own from what knowledge you have already gained.

Remember a lot of these question could be used in your Medical Society meetings!

1. What is the medical definition of a fracture?
2. If a patient presented with a possible fracture of their Ulna in what order would you do the following:
 - a. Plaster of Paris cast
 - b. Physiotherapy
 - c. Follow-up appointment in 4-6 weeks
 - d. Pain relief
 - e. Examination
 - f. X-ray
 - g. Back slab
3. What is the name of a doctor who specialises in bones?
4. What materials are used in surgical pins, plates and screws used to reinforce particularly bad fractures.
5. If someone were to suffer a fracture to their left ramus, which bone would that be?

Group activity opportunity:

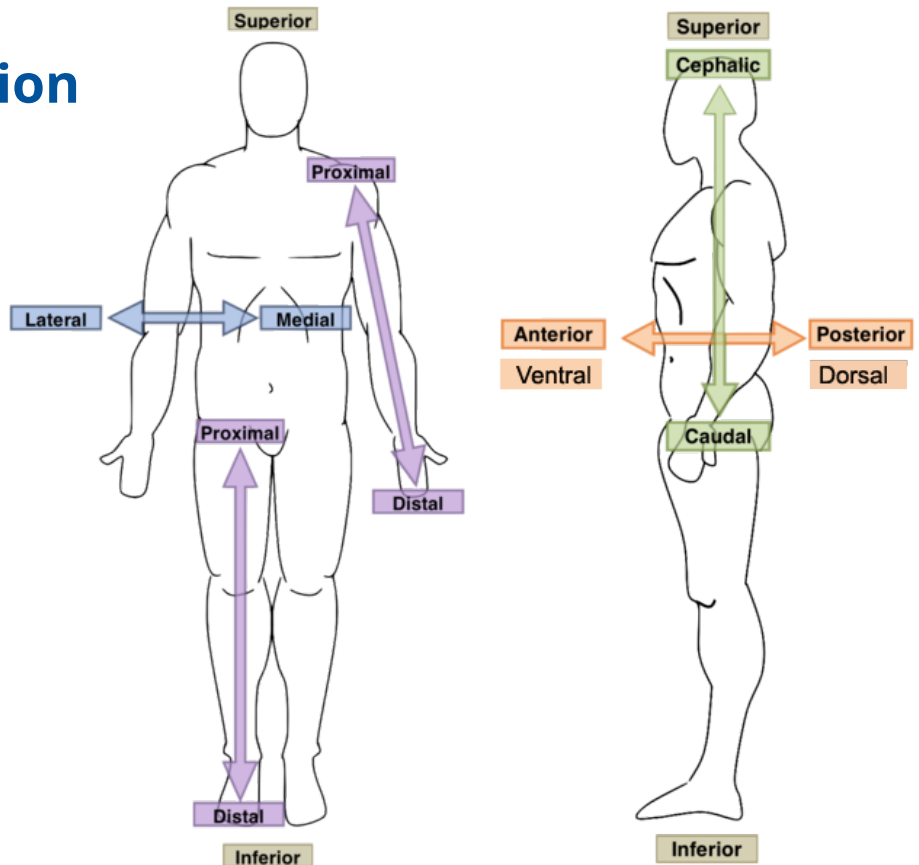
See how many bones in the human body you can name.

1. A fracture is a broken bone. It can range from a thin crack to a complete break. Bone can fracture crosswise, lengthwise, in several places, or into many pieces. Most fractures happen when a bone is impacted by more force or pressure than it can support.
2. a. Examination b. Pain relief c. X-ray d. Back slab e. Plaster of Paris cast f. Follow-up appointment in 4-6 weeks g. Physiotherapy
3. Orthopaedic surgeon.
4. Stainless steel, cobalt-chromium, titanium alloys.
5. The left side of the jaw (mandible).

Anatomical Position

The anatomical position is a way of describing the anatomy of a person so that it is easy to understand what part of the body is being talked about, no matter what direction the person is facing or where their limbs are.

This makes it easier to avoid confusion when discussing anatomy.

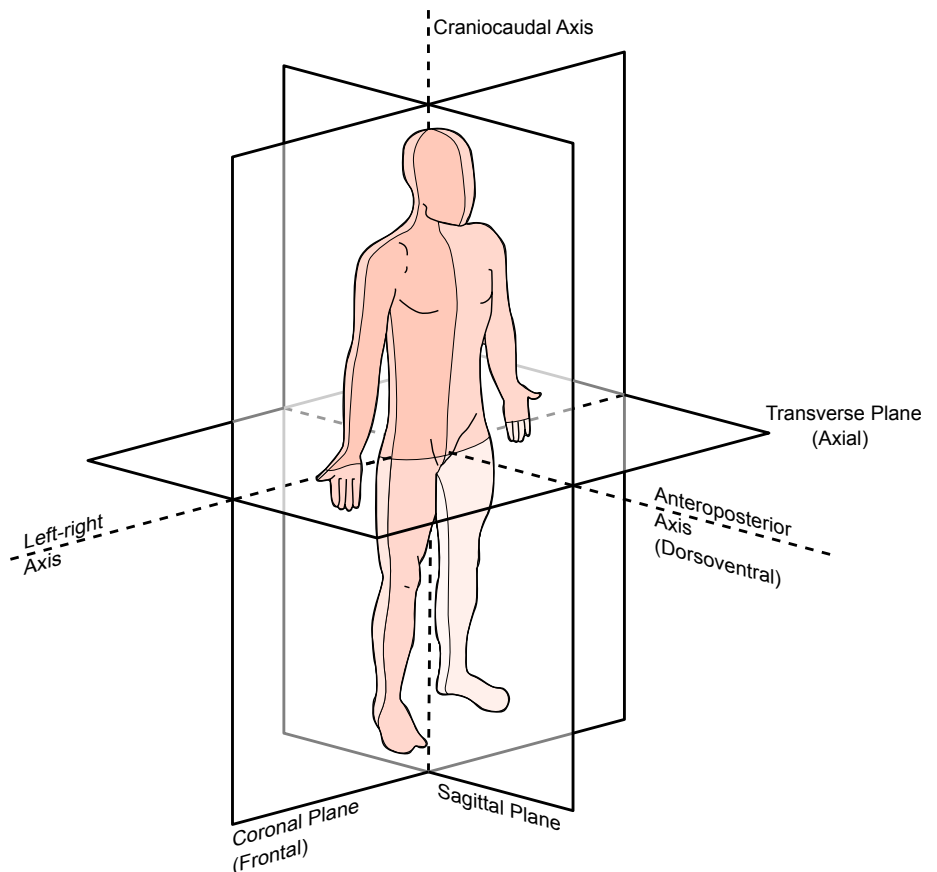


Anatomical Planes

There are three main planes that divide the human body into sections to make it easier to describe the locations of body parts and movements.

- Sagittal
- Transverse
- Coronal

These are the axis that would be seen in medical scans such as MRI, CT and radiographs.



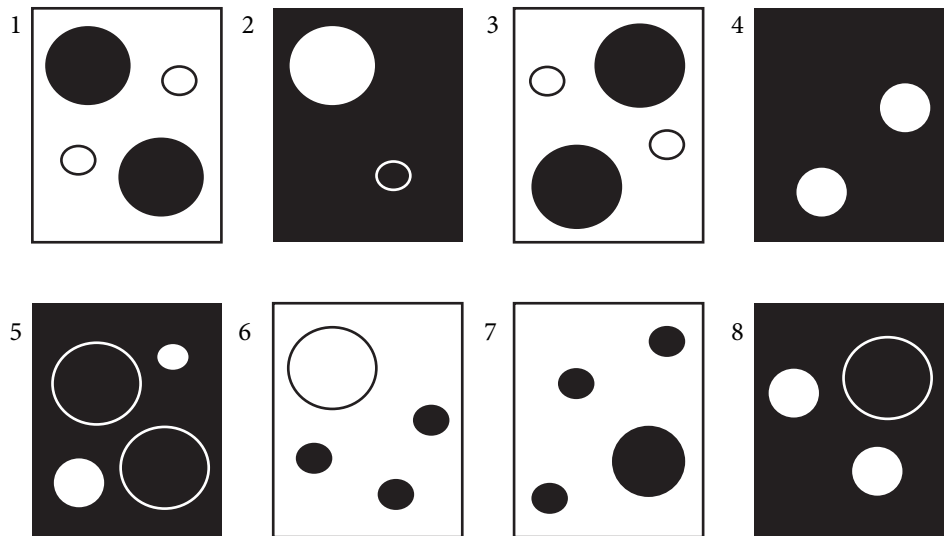
Becoming a doctor means not only having the intelligence and knowledge to succeed but also the mindset to be a Doctor. This is where the UCAT comes in. To go into medicine, you must take the UCAT. A multiple-choice computer test, comprised of five sections:

Section 1: Verbal Reasoning.
Section 2: Decision Making.
Section 3: Quantitative Reasoning.
Section 4: Abstract Reasoning.
Section 5: Situational Judgement.

Entire test running time: 2 hours

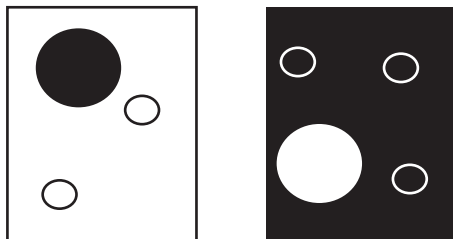
UCAT Practice Question

SECTION 4: ABSTRACT REASONING

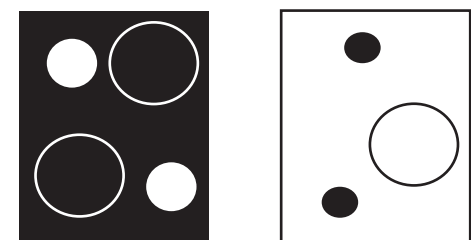
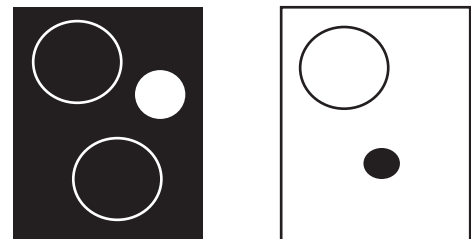


Abstract reasoning requires you to identify similarities and differences between images and then match them into a set. This section requires you to think quickly, you will have 13 minutes to answer 55 questions in the Abstract Reasoning section of the UCAT. Spot the pattern and match them to the groups: **Set A**, **Set B**, or **Neither**.

Set A



Set B



BMAT Practice Question

SECTION 2: SCIENTIFIC KNOWLEDGE AND APPLICATION

In this section of the BMAT you will have 30 mins to complete 27 multiple choice questions. Ensure that you read the wording of each answer closely.

A. Which of the following is a correct statement about Homeostasis:

1. Homeostasis is a process within the human brain that controls the heart rate, temperature, and water levels throughout the body.
2. Homeostasis is the process within the Hypothalamus of the brain that is responsible for maintaining a constant internal environment, via heart rate, fluid levels, glucose levels and internal temperature.
3. Homeostasis is the process within the Hypothalamus area of the brain responsible for maintaining equilibrium of the internal systems of living creatures.
4. Homeostasis is a process within the brain of mammals that control the beating of the heart, body temperature, and cell division within living creatures.

B. Huntington's disease is an inherited disorder, causing damage to brain cells. This is caused by a dominant allele, H whereas the recessive allele is h.

To inherit the disease, only one dominant allele is required for the disease to be present in offspring.

Using the following allele grid to answer the question:

		Father	
		H	h
Mother	H	HH	Hh
	h	Hh	hh

Which of the following statements are true?

1. A resulting child has a 25% chance of not inheriting Huntington's disease, but being a carrier of the gene.
2. A resulting child has a 50% of being a carrier only of Huntington's disease, but not inheriting the disease.
3. A resulting child has a 75% of inheriting Huntington's disease and 25% of being a carrier of the gene.
4. A resulting child has a 100% chance of inheriting Huntington's disease.

BMAT

BioMedical Aptitude Test

The BMAT is required by these universities in the UK:

University of Cambridge
University of Oxford Medical School
Imperial College London
University College London
Leeds' School of Medicine
Brighton & Sussex Medical School
Keele University
Lancaster University

The BMAT is a written test that tests your scientific knowledge as well as your aptitude for medicine, it does this over three sections:

Section 1: Aptitude and Skills.
Section 2: Scientific Knowledge and Application.
Section 3: Writing Test.

Entire test running time: 2 hours



Find out how over 80% of last year's Summer School students
successfully applied to Medical Schools in the UK

**GIVE YOURSELF THE BEST CHANCE
OF GETTING AN OFFER TO STUDY**

Medicine

Vet Med

Dentistry

Situational Judgement Test Question

Situational Judgement Tests (SJT) are an important means of assessing a healthcare professionals' professionalism and ethical reasoning. SJT questions comprise of real-life challenging scenario and provide five options for actions that could be taken in the situation given. The answers usually need to be selected or ranked in order of importance, from most suitable action/reasoning to least suitable action/reasoning. Respondents are expected to answer the question, in accordance with the guidelines from their governing body; in the case of doctors, this would be the General Medical Council (GMC). SJT questions are designed to challenge but with practice and understanding the reasoning behind the answers, they are something you can get the hang of. This is really important for applying to medical school, as you will be ranked on SJT questions in the UCAT, but also throughout your degree and in your future career.

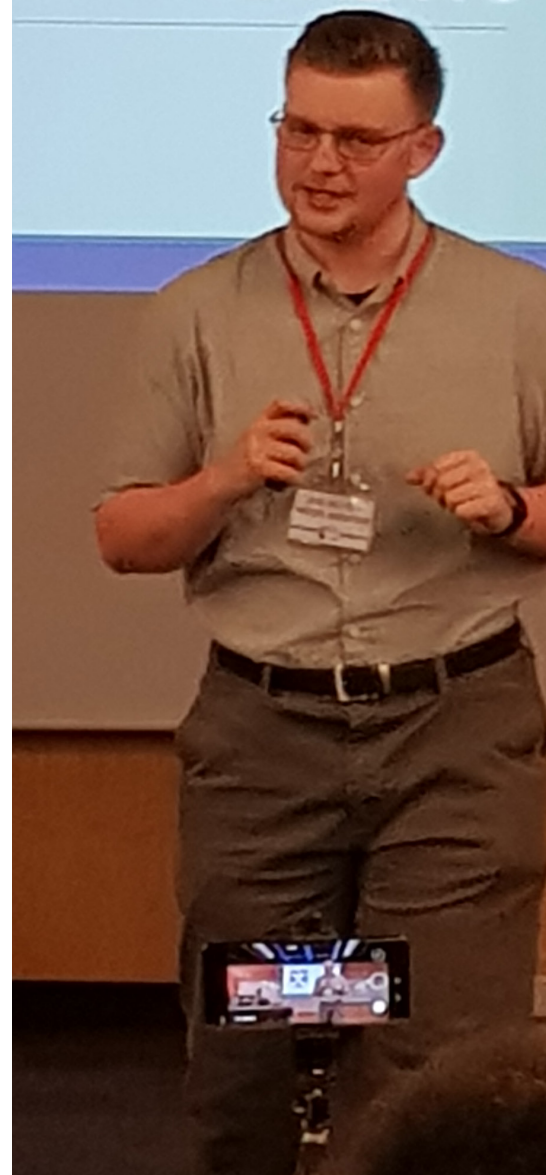
THE **MEDIC** SJT

You are a newly qualified GP seeing an elderly woman, who has come in with her son about abdominal pain. She speaks Tamil and very little English but her son speaks both fluently and has come along to translate. It is clear from greeting her that she understands some of what you are saying but replies in stilted speech.

Order the following actions in order of appropriateness.

- A.** Telephone the NHS languages service to ask for a Tamil translator.
- B.** Allow the son to translate for you.
- C.** Ask the son to step outside in the interests of patient confidentiality and try to communicate with the patient yourself.
- D.** Ask a GP who speaks Tamil to help with the appointment.
- E.** Ask a senior GP for advice in this situation.

UNIVERSITY
OF
ST ANDREWS



Adam Borland
Third Year Medicine
St Andrews University
Summer School Mentor 2020

UCAT Answer: 1. A 2. A 3. A 4. Neither
5. B 6. B 7. Neither 8. B

BMAT Answer: A. = 2 B. = 1 & 3

Situational Judgement Test Answer: DAEB

If there is a Tamil speaking doctor available, asking them to assist would be most appropriate as there is no time delay and they would be able to communicate directly with the patient in their own language (**D**). An NHS translator would be able to assist, but this may take time to arrange and if done over the phone, would be unable to pick up on visual cues (**A**). Asking a senior doctor would be appropriate because a language barrier is preventing adequate care, although they are unlikely to be able to suggest alternatives in this case (**E**). There are problems with allowing a family member to translate as you don't know if the translation is accurate, leading to miscommunication, and the family member could leave out important or sensitive information. They may also not know medical terminology (**B**). Attempting to communicate with the patient yourself would be the least appropriate course of action as this will result in the worst quality of communication and constitutes poor patient care (**C**).

THE **VET** SJT

A member of the public brings a baby kestrel into your practice. They found the kestrel by the side of a busy road.

The bird is unable to fly.

You take a look at him and realise that there is crepitus in the wing.

You suspect it will be fractured, and unable to heal well enough for rehabilitation and re-release.

What do you do next?

- A.** Fix the fracture. You know you are good at orthopaedic work and would like the challenge of trying surgery on an avian species due to the challenges of pneumatic bones. You then intend to keep him at home in your aviary in case he is not capable of hunting in the wild after a prolonged recovery.
- B.** Take a conscious x-ray of the wing, which you can send to the specialist vet for further advice once the extent of the injury has been assessed. You can then plan accordingly; for euthanasia, sending the bird for referral, treating yourself or sending to a rehabilitation centre.
- C.** Seek advice from a vet who specialises in raptor rehabilitation and arrange transport for the bird to see him personally.
- D.** Euthanise him. It is not fair to keep a wild animal in captivity.

Situational Judgement Test Answer: CBDA

In a situation like this seeking advice from an expert would be preferable to secure the best possible option for rehabilitation and release. **(C)** The next best option due to the lack of a specialist close enough is to transport the Kestrel. You can then do the initial testing and take on the case yourself, aiming towards recovery and release, based on the advice of the specialist. **(B)** Euthanise is one of the last options but if the prognosis was poor and the chances of rehabilitation and release were not viable, this would be the course you would take. **(D)** This should never be an option, wild animals should not be seen as a pet, any care given to an animal should be for their benefit, not for personal reasons, and to ultimately release back into the wild. **(A)**

An important skill as a future medical practitioner is to debate, critically appraise information, weigh up arguments for and against and come to a considered and well-reasoned view point. In this series, we provide a debate topic which we want you to consider in detail; what immediately comes to mind, how would you defend your point of view if challenged, what evidence would you use to support your arguments and what are the strengths and flaws of the for and against arguments? We encourage you to work through the questions adjacent, ideally with peers or colleagues.

THE **MEDIC** & **DENTIST** DEBATE

"WHAT ARE THE BENEFITS OF CALLING 111 OVER 999?"

Points to consider:

- **Do you know what calling 111 is for, and what it is appropriate for.**
- **The pro's and con's of a service such as 111**
- **How do un-necessary 999 callouts of ambulances cause a negative impact,**
- **and who are the parties most effected?**
- **Is it a possibility that calling 111 instead of 999 could cause harm?**
- **If there was a charge for calling 999 for a non-emergency, would people make more use of 111?**
- **How well advertised do you think 111 is?**
- **Could it be presented in a better more accessible way?**
- **Should 111 be manned by trained medical staff? (e.g. nurses, paramedics)**
- **Is 111 a worthwhile service for what it offers?**

Medic Mentor Students: Awards Program 2020



Every student considering an application to medical, dental or vet school should also be enrolled on the Awards Programme because...

- 1. It increases your chances of getting into medical, dental and vet school**
- 2. It helps you to focus your efforts and achievements**
- 3. It is an impressive medically relevant Award to have on your CV**
- 4. It puts you in the running for a £12,000 scholarship for university**
- 5. It makes the process more fun and less stressful!**

Dr Sharron Uppal has put together a diagram to help explain how the Awards Program is structured.

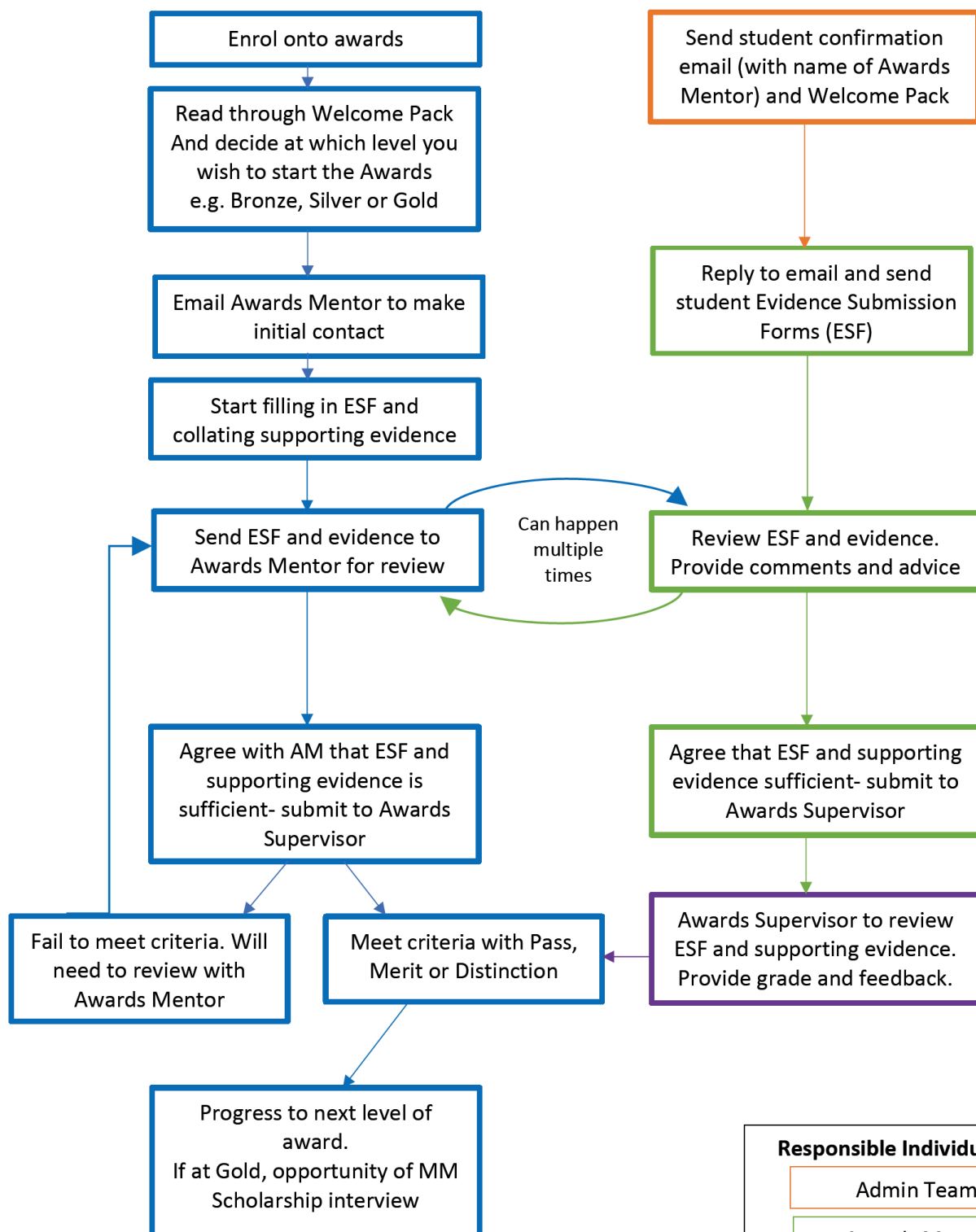
It breaks down what your role is, and how we at Medic Mentor work alongside you, from the assignment of you Awards Mentor (AM), how they will assess your Evidence Submission Forms (ESF) to ensure you are meeting the Awards criteria for the level you have entered at, be it Bronze, Silver or Gold depending on your year.

It will give you a wide array of skills to help you with the medical school application process and as a bonus all the content and achievements you will cover are medically relevant.

Medic Mentor Awards Programme Progression

Awards Student

Medic Mentor Team



Responsible Individual/Team
Admin Team
Awards Mentor
Awards Supervisor
Awards Student

THE FOUR BASIC BIOETHICAL PRINCIPLES GOVERN MEDICAL ETHICS FOR ALL WHO WORK IN HEALTHCARE. THESE ARE;

- **AUTONOMY**
Respecting an individual's choice to make their own informed decisions.
- **JUSTICE**
Ensuring that all patients are treated equally and fairly.
- **BENEFICENCE**
Doctors must always act in the patient's best interest.
- **NON-MALEFICENCE**
"Do no harm". If some harm or discomfort is a result of treatment, it must be outweighed by the benefits.

Keep these principles as a framework when answering any ethical situation that you encounter.

THE **MEDIC** ETHICAL SCENARIO

You are a GP in a large university city and an 18 year old first-year law student comes into your practice.

She is adamant that she would like tubal ligation as she says she is sexually active and would never like a child as she believes this would ruin her chances of becoming a Supreme Court justice.

She has been having uncomfortable side effects with the hormonal contraceptive pill and would like more information on this permanent surgical method of contraception.

She has asked for you to not tell her parents about this, who are also patients at the practice, as she doesn't think that they will support her decision.

A day after, her mother rings up asking why she visited.

1. **Discuss your initial impressions of the case. What is your opinion of the situation?**
2. **What are the core ethical principles in medicine and how do they apply to this case?**
3. **What are the different ways you can give consent?**
4. **What is the difference between informed and real consent to an operation?**
5. **When is a patient competent to give consent?**
6. **What is capacity and how is it assessed?**
7. **Why is confidentiality important in medicine?**
8. **When can you break confidentiality?**
9. **What would you do in this situation?**



**Would you like to write for the
MENTOR magazine
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Email: mag@medicmentor.org**

THE **DENTIST** ETHICAL SCENARIO

After completing your dental and medical degrees and finishing your foundation plus surgical training you secure yourself a position as a specialty registrar in Oral and Maxillofacial Surgery.

Working in an NHS hospital, one of your first cases is a 22 year old female, with a mild case of prognathism.

When going over her history she informs you that she does not know how she developed the condition, but wonders if it was due to sucking her thumb extensively as a child; resulting in the lower jaw misalignment.

She suffers no impediments with eating, speaking or breathing and the condition is mild enough that it causes her no pain.

She has been researching online about corrective surgery, so discussed this with her general dental practitioner, who has referred her to you.

After a short examination you realise that the condition would in no way need surgery. The removal of one of two of their teeth to reduce the overcrowding and a simple brace fitting would correct the displacement of her teeth within 12 months.

You offer her this less invasive and more realistic option.

Unfortunately, the patient is adamant that she wants the surgery she has researched online.

- 1. What are the potential concerns of patients looking up medical treatment?**
- 2. Would the patient be entitled to a second opinion on her case?**
- 3. Would a doctor be able to refuse to treat a patient, how would this fit with the ethical principles in this case?**
- 4. Why would her dentist have referred her to a Maxillofacial Surgeon?**
- 5. What risks are there to the patient of an invasive surgical procedure?**
- 6. Discuss which ethical principles apply to this case?**
- 7. In what way could a doctor better explain why a patient would not need a procedure?**
- 8. How would you explain alternative treatments to a patient?**

THE **VET** ETHICAL SCENARIO

After taking a fall at the final hurdle during the championship race on Saturday, Celeritas has been lame ever since.

As a 4 year old filly, she had a promising racing career ahead of her, but this future has been put in jeopardy by her injury.

The vet has found a fracture of the cannon bone.

There are treatment options other than euthanasia, but these are expensive and have limited success rates – the vet hypothesises that around 50% of the fractures seen are able to pull through the surgery and return to light work such as hacking after a period of at least 6 months of box rest.

The other 50% have further complications, for example non-healing of the bone or developing overload laminitis during recovery.

As an energetic horse, she would be incredibly restless in a stall.

- 1. Would you put her through the surgery or make the decision to euthanise her?**
- 2. How does cost factor into the treatment of animals, particularly working animals?**
- 3. As a racing horse what kind of detriment would a six-month recovery time have on Celeritas career?**
- 4. If you were the owner of the racehorse and the odds of recovery are 50/50 with a long recovery what would you do?**
- 5. If you were the vet how would you go about explain the pros and cons of surgery to the owner of the animal?**
- 6. Also as the vet how would you best offer euthanasia as an option?**
- 7. How would this effect the animal's quality of life?**

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Sophie Bridgewater Year 12

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9th May
LEICESTER

22nd March
LONDON

10th May
BIRMINGHAM

28th & 29th March
SCOTLAND

16th May
LONDON

5th April
CARDIFF

30th May
LONDON

19th April
MANCHESTER

6th June
LONDON

25th & 26th April
LONDON

7th June
HERTFORDSHIRE

2nd & 3rd May
LONDON

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CRITICAL ANALYSIS OF AN ARTICLE

LEARN TO THINK CRITICALLY LIKE A HEALTHCARE PROFESSIONAL

A key skill that every medical student should acquire is the critical appraisal of research articles. In the UK, we practise evidence-based medicine which essentially means that decisions regarding clinical guidelines, investigations and management of conditions are made after careful evaluation of scientific evidence. The most basic form of such evidence is research published in peer-reviewed scientific papers. However, there is a real art to distinguishing between good, robust scientific findings and science that is lacking in good evidence. Just because something is published in a newspaper, online, journal, or even a textbook does not mean it is definitely true.

Critical appraisal is a process used to identify the strengths and weaknesses of an article in order to objectively assess its usefulness and validity.

We, at Medic Mentor, would like to encourage you to learn this invaluable skill as soon as possible. However, instead of reading dry scientific papers that are likely to be above your level of understanding, in each School Societies Bulletin we will give you an interesting medicine-related article to read and appraise. This is also a useful skill, as we are presented with opinions mixed in with facts in the media every day, and doctors need to be able to dissect to the key issues.

As well as this, we now offer an amazing opportunity for those of you who want to voice your opinion or just get a huge brownie point for application to medical school and beyond. Write down your critical appraisal using the "Letter Guidance" in the downloads section of our website for full details. The best letters will be published in the subsequent issue of Medic Mentor Magazine, the only magazine in the UK dedicated to students applying to healthcare degrees, where school students can put their name to an article. It cannot be emphasised enough how good such a thing would look on a medical candidate's CV.

CRITICAL ANALYSIS OF AN ARTICLE

BODILY AUTONOMY IN CHILDREN AND YOUNG PEOPLE

Here we have an article taken from the Medic Mentor magazine, the theme was

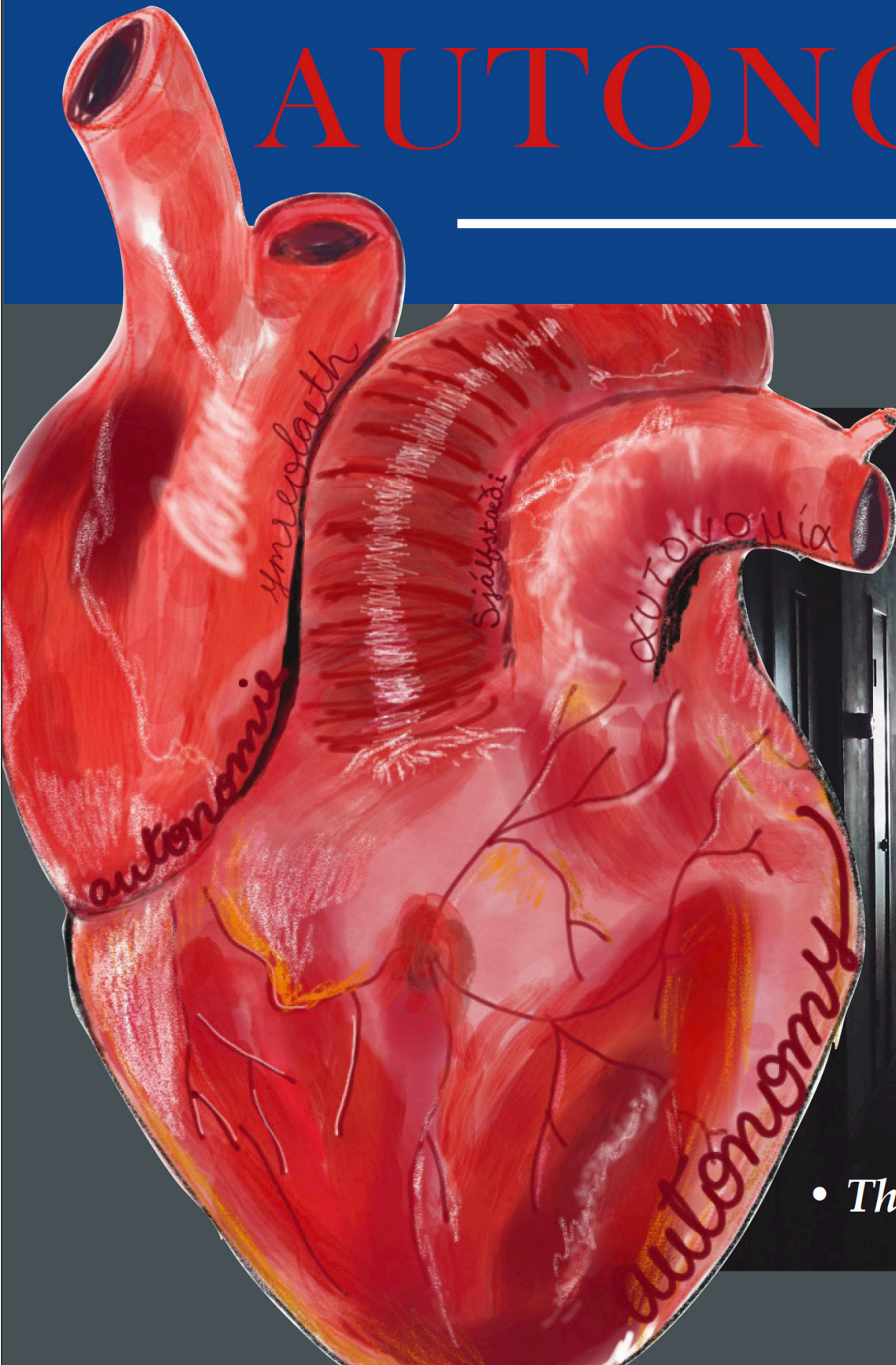
"Autonomy"

After having worked through this study guide you should have a grasp on how to read, and without bias, analyse the information presented to you in the article. In February's Study Guide, one of our mentors will have analysed this same article for you to compare to your own critical analysis.

MENTOR

Quarterly Anthology Magazine
Autumn/Winter 2019-20

AUTONOMY



Medical Ethics
• The Four Pillars •

Bodily Autonomy in Children and Young People: A Case-Led Discussion

MARYAM MEDKOUR



FEATURES

Bodily autonomy emphasises the importance and right of self-governance over one's own body, without external influence or coercion. However, bodily autonomy is not without restrictions - it fundamentally depends on an individual's capacity, which may be impaired by various factors, of which the most predominant are intoxication, mental health, and age.

A person is assumed to possess bodily autonomy if they are an adult with capacity to provide valid consent. Similarly, those that are competent and of 16 or 17 years of age may consent. Children below 16 years of age may consent to their treatment if they are Gillick competent - the parameters for which will be discussed later. Although there is no explicit lower age limit for Gillick competency, it would rarely be appropriate or safe for someone under 13 years of age to consent to treatment without a parent's involvement. Should a minor refuse treatment, it is possible for someone with parental authority or a court to overrule their decision provided the minors' best interests are considered. Coming to a decision on the best interest of a patient involves consideration of the welfare of the patient, meaning their physical health, as well as the psychological

harm which could be inflicted by overruling their autonomy. Children are considered vulnerable as they're generally dependent on adults to maintain their wellbeing - independently they may be unable to make informed decisions. Despite this children have rights which must be respected, hence it is a healthcare professional's responsibility to determine the child's interests and desires to ensure that the delivery of care will not significantly impair their quality of life. Procedures must be effectively communicated so that the patient understands the risks and benefits, and can feel certain that their welfare is being prioritised.

Ensuring the validity of consent

There is a moral and legal obligation to respect patient autonomy, which includes the right to consent to treatments. Doubts regarding the validity of consent can present ethical dilemmas. This highlights the importance of the principles which validate consent (consent must be voluntary, informed, and the individual must have the mental capacity to make the decision) as well as judicial precedent as court cases provide guidance when deciding on the validity of consent.

For consent (or withdrawal of consent) to be voluntary, the patient's decision mustn't be influenced by pressure from medical staff, friends or family. This is ensured by doctors through objectivity and respect for patient autonomy. A scenario by which withdrawal of consent may be deemed involuntary, and therefore invalid would be if an individual from a family of Jehovah's Witnesses felt pressured by family beliefs to refuse a blood transfusion, despite the necessity declared by a medic.

Consent must also be informed. The extent of information provided to patients is decided by doctors considering what a reasonable patient would expect to know before proceeding with treatment. This method of informing patients arose following the Montgomery Case (2015). Nadine Montgomery was pregnant with her first child, Sam. She expressed general concerns throughout her antenatal care that the size of her baby might lead to complications with vaginal delivery, however, the risk of shoulder dystocia occurring wasn't discussed (Mrs Montgomery has type 1 diabetes, which increases the risk of this complication to 10%). During labour, the risk became a reality causing a 12-minute delay between the delivery of Sam's head and shoulders. The compromised blood flow through the umbilical cord led to a significant hypoxic injury which resulted in brain damage and cerebral palsy. The case was made stating the consultant hadn't discussed the possibility of shoulder dystocia, its consequences and the alternative of a Caesarean section, hence negligence occurred as Mrs Montgomery's decision was not informed. The consultant argued the risk of a serious consequence from shoulder dystocia was so negligible, it didn't need to be discussed, and Mrs Montgomery hadn't asked specific questions. However, the court recognised this would have required her to have knowledge a non-medical professional cannot be expected to have. This case changed the law on consent from doctor to patient-focused, thus promoting the autonomy of patients, and inciting doctors to discover what concerns a patient may have.

Children in particular cannot be expected to have the competence to understand the intricacies of certain treatments. Therefore doctors should thoroughly express details of procedures, as well as

assess the patient's priorities for treatment, so that they're involved and the necessary information is delivered. It is important that children have a competent guardian trusted to look after their best interests in circumstances where they're unable to understand their treatments, as they can communicate collaboratively to decide on the best course of action.

Doctors must also judge whether a patient is competent to make the decision. The Mental Capacity Act states a patient should be able to understand the information presented, retain the information, weigh up the information and communicate their decision. It sets out a 2-stage test of capacity, which essentially asks two questions: is the brain impaired (due to illness or external factors such as intoxication), and does this impairment result in the persons' inability to make a specific decision? Mental capacity may fluctuate with time and scenario, therefore minors may be sufficiently competent to form certain decisions such as consenting to vaccinations, however surgeries are more complex to understand.

Gillick Competence & Fraser Guidelines

In 1974, healthcare professionals were advised by the 'Department of Health and Social Security (DHSS) memorandum of guidance' on the administration of contraceptive advice. It stated a doctor was 'not acting unlawfully provided he acts in good faith in protecting the girl against the harmful effects of intercourse', and that parents shouldn't be contacted without the patient's permission. In December 1980, concern regarding the lack of parental authority meant it was iterated that ultimately doctors would seek to persuade a child to involve a guardian - but the child's decision couldn't impair their clinical judgement. The department recognised that the risk imposed by under 16s being discouraged to seek professional advice due to a lack of confidentiality could threaten their duty of non-maleficence.

The 'Gillick test' is used to establish whether children under 16 can consent to medical procedures.

Activist Victoria Gillick campaigned against the lack of parental authority following the publicity

received by the revised 1980 memorandum. She sought the assurance from her local area health authority (AHA) that no contraceptive advice or treatment would be given to her daughters without her knowledge or consent. The AHA was unable to provide this assurance so in 1982, Mrs Gillick pursued the case in the High Court, declaring that prescribing contraception would be illegal as it would encourage sex with a minor and involved treatment without parental consent. Her claims were dismissed as the court ruled providing advice or treatment did not equate to supporting underage sex. However, in 1984 the Appeal Court briefly overturned the ruling, and Mrs Gillick's declaration was granted. This was concerning as it resulted immediately in a diminished number of under 16s consulting family planning clinics. The DHSS decided to appeal to the House of Lords (1985), which held that 'parental rights' existed solely to safeguard the best interest of a minor and consequently had little relevance in the administration of contraception.

The 'Gillick test' is used to establish whether children under 16 can consent to medical procedures. It requires them to fully understand what their proposed treatment entails: its purpose, nature, the effects, risks, likelihood of success as well as the availability of alternatives.

"As a matter of Law, the parental right to determine whether or not their minor child below the age of sixteen will have medical treatment terminates if and when the child achieves sufficient understanding and intelligence to understand fully what is proposed." - Lord Scarman

A competent refusal to treatment by under 16s can be overruled by a court or legal guardian if healthcare professionals believe a proposed treatment to be requisite. Medics should discuss the reasons for the refusal with the child beforehand to ensure their decisions do not stem from inaccurate perceptions. Further considerations concerning the harm inflicted by imposing treatment on an unwilling participant should be made by doctors,

including: how critical is treatment? Are less invasive alternatives available? Is there time for further discussion?

The overriding duty of healthcare professionals is the prioritising of a child's best interests in circumstances where refusal to treatments would lead to irreversible harm. When a treatment is proposed, a competent child is allowed to consent as the medic is most probably suggesting a beneficial treatment, so the child's best interests are upheld. However a refusal of treatment could cause significant harm, and therefore it is a risk which by law medics cannot allow. The issue of this is the difficulty in practically enforcing treatment without consent. Treatment may involve the young person's cooperation, (regular medication, lifestyle restrictions etc.) and in these cases doctors are severely limited as inevitably, the child's best interests are not maintained if they are unwilling to participate in treatment.

The Gillick case also introduced the Fraser guidelines, which allows doctors to provide contraceptive advice and treatment without parental consent provided they are satisfied that the following criteria is met:

- The young person will understand the professional's advice
- The young person cannot be persuaded to inform their parents
- The young person is likely to have sexual intercourse with or without contraceptive treatment
- Not receiving the contraceptive treatment may be of detriment to their physical and/or mental health
- The young person's best interests require them to receive contraceptive advice or treatment with or without parental consent.

Fraser guidelines were initially related only to contraceptive advice and treatment. Since 2006 they also apply to decisions about treatment for STIs and abortions.

The Charlie Gard Case

On the 4th August 2016, Charlie was born with a rare genetic condition which caused his health to rapidly deteriorate. Great Ormond Street Hospital (GOSH) stated his prognosis was bleak from the

moment of diagnosis. Despite this, Dr Hirano (an acclaimed American neurologist and professor at Columbia University) proposed experimental nucleoside bypass therapy (NBT) in the US - having never seen Charlie and knowing evidence was inconclusive regarding the potential success of the therapy. No animal or human with Charlie's condition had been treated with NBT, but GOSH still applied for ethical permission to attempt the therapy (cost of treatment was an insignificant variable as Charlie's parents had independently fundraised £1.3m). However, by the time a decision was reached Charlie's condition had deteriorated further, and following the consultation of experts internationally it was concluded that Charlie's life support should be switched off.

While both GOSH and Charlie's parents had his best interests at heart, the chosen course of action was conflicting. Parental authority meant the parents had the right to make a decision for Charlie, however this authority isn't conclusive as doctors disagreed that this was in Charlie's best interests. Despite the hope that the experimental therapy would be efficient, scans indicated success was unlikely so the doctors duty of non-maleficence prohibited the prolonging of the child's suffering. GOSH stated 'every day that passed was not in his best interests.' This disagreement meant the case decision moved on to an independent third party (the courts) to objectively decide on Charlie's fate.

The media polarised GOSH and Charlie's parents throughout the legal battle, inferring that GOSH was a defeatist and uncommitted establishment. This portrayal antagonised the public and the media preyed on human compassion for their own financial motives, and as a consequence of binary media coverage, staff at GOSH were victims of hostility and abuse, both online and in the streets. The circumstances were simplified into a villain and victim scenario, despite the multi-faceted reality that failed to be considered such as the complex decisions which had to incorporate considerations such as quality of life and dignity on Charlie's behalf.

The courts ruled in favour of GOSH despite the common belief that there was 'nothing to lose' in undergoing experimental treatment. The treatment would most probably have been futile, and have prolonged Charlie's suffering in a state which GOSH's legal team described as little more than 'existence.'

This would have severely impaired Charlie's quality of life, so the compassionate decision was to proceed with palliative care.

The dominant issues revolved around Dr Hirano perpetuating false hope by suggesting treatment with minimal knowledge on the circumstances, this divided the medics and Charlie's parents as it insinuated that GOSH was unwilling to help. Additionally, the lack of clarity when deciding what is entailed by 'best interests' caused the opposition of parental authority and clinical judgement. It is therefore important that medics have an outline on what constitutes 'best interests' as well as the support of impartial courts so that the element of subjectivity can be removed.

Bodily autonomy cannot be determined through generalisations, the possession of bodily autonomy regarding healthcare is unreservedly linked to an individual's capacity to consent - determined on a case-by-case basis. The various factors which restrict a child's right to bodily autonomy are designated to maintain their best interests, despite the ethical dilemmas which are inevitable posed. I would argue that these precautions are necessary, as a child, if vulnerable and not deemed Gillick competent, cannot form insightful and objective judgements, and consequently may be at risk of harm without such limits. ◀