Oral assessments will depend on the demonstration of the following characteristics related to the case and exploratory questions.

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| Risk factors and Society | Relating of risk factors with several diseases;  Separating whether the risk factors are genetic, socioeconomic, lifestyle and healthcare system related;  Ability to clearly identify risk factors related to selected disease,  Knowledge of the likelihood of an individual to contract the disease,  Knowledge of interventions to reduce spread or prevalence of the disease  Knowledge of why particular factor constitutes a risk for a disease | 10% |
| Symptoms | Ability to identify symptoms of the disease,  Knowledge of the definition of the symptoms,  Ability to determine possible causes of symptoms,  Ability to associate symptoms to organ groups | 10% |
| Anatomy, Physiology, Histology | Ability to identify the position of the organs and their neighbours,  Ability identify the functions of the organs,  Ability to identify layers of the organs and type of tissues that an organ has. | 15% |
| Physiopathology of disease | Ability to identify the how the diseased status deviates from the normal functioning,  Ability to identify how the organ and other organs change to accommodate the diseased status | 20% |
| Diagnostic tests and Diagnosis | Ability to identify what selected list of diagnostic tests is used to measure.  Ability to identify what diagnostic tests can be used to diagnose a particular problem,  Knowledge of the diagnostic tests and meaning of the result, Ability to differentiate between the diagnostic test for diagnosis of the disease and the diagnostic tests for monitoring of the disease.  Ability to identify the order of the diagnostic tests based on the clinical symptoms of the patient. | 15% |
| Treatment | Ability to identify what are the objectives of treatment,  Ability to identify which treatment methodologies are used f and the reason of choice. | 15% |
| Prognosis | Ability to define the prognosis of the disease,  Ability to define possible complications and co-existing conditions that may cause increasing severity.  Ability estimate possible rates of cure and the leading causes of mortality (death) and morbidity (disabilities). | 15% |

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| Instructions |  |
| Some of the questions that will be used as a conversation started regarding the disease include;  1. What are the common symptoms that you see in this disease?   * Muscle aches * Stomach pain * fever * Vomiting * Anxiety * Diarrhea * Stress * Opioid cravings / obsessive thoughts * Hyper alertness * Depression * Other:   + Risk of bloodborne diseases   + Loss of employment, housing, social networks, and finances * During consumption / overdose / opioid intoxcication   + Hypotension—Low blood pressure   + Hypoxia—Slower respiration   + Eye miosis—autonomic nerve system suppression in the LC   + Drowsiness   + Unconsciousness   2. What are some of the physical changes we can observe in this disease?   * Weight loss * Restlessness * Explosive mood swings * Physical abrasions—unsafe consumption * Dehydration * Impaired neurological function   3. Can you talk about the cause of this disease?   * Opioid over-consumption * Social history / early life trauma   4. Can you describe the linkage between the cause of the disease and the symptoms and physical changes?   * Noradrenalin and autonomic nervous system   5. What would we expect to see in laboratory analysis?   * Blood tests   + Complete blood count CBC * Urine drug screen * Toxicology screen * Arterial blood gas (ABG)   + pH levels * Electrocardiogram   6. What are the most common lab tests that show abnormal results?   * Red blood cell distribution width % * Albumin (g/dl) * Bilirubin direct (mg/dl) * Lymphocytes % * Protein total * Urine testing   + Antibodies specific to targeted opioids   7. How does this disease progress? and why?   * **mu-opioid** receptor **agonists** enter the bloodstream * Bind to mu-opioid receptors and activate the receptors * Inhibit **K+ conductance** * Prevent signals between neurons—stopping pain signals * Mu-opioid receptors signal the **ventral tegmental area** to release dopamine into the **nucleus accumbens** causing pleasure * Triggers the **mesolimbic reward system** usually activated by food, sex, etc * Creates cravings strong enough to override the **prefrontal cortex** and self judgment * Tolerance develops with repeated use—opioid receptors become damaged do to overstimulation.   + slower **opioid receptor-G protein uncoupling**, decreased receptor recycling, and reduction of opioid receptors do to overstimulation * Opioids repress the release of **Noradrenaline**   + Neurotransmitter for wakefulness, breathing, and blood pressure * **Locus Ceruleus** produces more NA to compensate * Opioids wear off, excess levels of NA cause withdrawal symptoms * **Dorsal root ganglia** * Takes opioids for pain * They get a dopamine rush * Damages mu-opioid receptors / tolerance * Suppresses noradrenaline * Locus Ceruleus produces more NA * Opioids wear off, high NA levels produce withdrawal symptoms * Takes opioids to reduce rebalance NA * Repeat      * After detox, they lose tolerance to opioids but still have cravings * Consume at pre-treatment doses and overdose   + Street drugs, fentanyl   + Severe tolerance * **Mu-opioid receptors** * **Postsynaptically** in the dorsal horns of the spinal cord * And in **periaqueductal gray area of the brain**   + **Autonomic nerve function**     - Heart rate     - Respiratory rate     - Pain sensation * Opioid enter the bloodstream, reach the nervous system, bind to mu-opioid receptors more strongly than **neurotransmitters**, inhibit **K+ conductance** and prevent action potential signals between **neurons**. * In the dorsal root * Normal conditions:   + Sensory neurons in peripheral nervous system detect stimuli   + Send action potentials through nerve tracts to central nervous system   + Signals sent back out to the somatic nervous system (voluntary action)     - And autonomic (involuntary)   + Effector tissues carry out the command on muscles and organs   + K+ ions are concentrated inside the nerve cells   + Na+ ions are concentrated outside   + Na/K pumps in cell membranes use ATP to allow the flow of ions & electricity signals down the nerve tract   8. What treatment options available for the patients? Would they cure the disease or slow the progression of the disease   * Methadone   + Still an opioid, but produces minimal tolerance and can be used with drug tapering plans * Longer Acting Derivative of Methadone (LAAM)   + Similar to methadone but lasts longer * Naltrexone and Naloxone   + Prevents the effects of opioids and may be used after tolerance is gone   + Mu-opioid receptor **antagonist**—binds to receptors but does not activate them or prevent K+ conductance * Clondidine   + Supresses NA to help manage withdrawals * Buprenorphine   + Works like methadone, but prevents overdose if too much is taken   9. If the disease is cured, would it leave sequela?   * It depends. Yes, if use is longterm * Cravings will always be there   10. If the disease is not cured, would it cause the death? If yes, how?   * Yes   Please consider that if there are other people who worked on the same chronic disease in your oral assessment group, you will be asked questions regarding your acute disease. Furthermore, if you didn't attend courses regularly also please be ready for some questions regarding the anatomy and physiology of the organs involved in your disease. | |
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