**Cardiology/Endocrine Case Study**

**Course Student Learning Outcomes**

Upon completion of the case study, students will be able to …

1. Apply the principles of pharmacology relative to pharmacotherapeutics across age levels including the effect of race, gender, ethnic group, and special populations.

2. Describe the uses, actions, effects and nursing implications of general classifications of drugs and selected specific drugs.

3. Investigate media resources and information technologies to enhance knowledge base of pharmacology.

4. Analyze the responsibilities of the nurse when administering drugs.

5. Apply pharmacological research to nursing practice.

**Purpose** The purpose of this case study is to apply concepts from pharmacology and

pathophysiology, national guidelines, and evidenced based clinical practices in the management of chronic disease. Remember this paper must follow APA guidelines for font, in text citations, reference list etc. No abstract is needed. Provide headings for the different questions in your paper.

**Setting** This case study takes place in a primary care setting in a small rural hospital clinic that provides health care services to predominately Latino field workers and their families. The rural clinic serves children and adults for all medical needs including well care, acute care, and chronic conditions. Some clients have seasonal insurance, state health insurance, or no insurance. Many live below poverty level according to the federal guidelines. Most do not own a vehicle. Most do not speak English; so, a translator is provided at each visit. The clinic is one hour from the nearest city where higher level of care can be offered to patients in need of specialty care. The clinic is staffed by one family medicine physician, an internist, two nurse practitioners, an RN, two LVNs, a lab tech, eight MAs and support staff. Once a week a cardiologist, podiatrist, pain specialist, orthopedist and ophthalmologist service the clinic. There is an on-site lab and a pharmacy two blocks away. There are two ambulances servicing the entire south end of the county with poor availability for emergencies.

**Client**

Jose is a 47 year old morbidly obese Latino male who presents to the clinic for follow up evaluation of headaches, dizziness, ringing in his ears and frequent urination. He reports having a headache that “comes and goes” with ringing in his ears and sometimes he sees spots. Jose has taken acetaminophen and states that seems to help. Due to his work schedule of six 12 hour days, Jose has not had preventive care. He reports fatigue and is depressed regarding his current income situation. Jose has just been laid off for the season and will lose his insurance in 30 days until the restart of the harvesting season in March. He is concerned about paying for any health care that may go beyond his benefit period. Jose lives with his pregnant wife, who does not work, and their seven children in a three bedroom one bath house that they share with his parents and his brother’s family of three.

**Review of Systems Subjective Data**

General: occasional fatigue, gradual weight gain over the past ten years

HEENT: (+) visual and hearing changes with HA; (-) cold or recent upper respiratory

changes, (-) rhinorrhea or nose bleeds,

Cardiac: (-) chest pain or tightness, no palpitations

Respiratory: no asthma, (+) snores at night

GI: (-) pain, nausea, vomiting, constipation, visible fecal blood, (+) GERD, reports occasional indigestion after meals,

GU: (+) frequent urinary for 1 month with increased thirst

MS: (+) chronic bilateral shoulder and low back pain for 7+/- years, takes ibuprofen prn.

Neuro: (+) headaches 2- 3 times a week relieved with acetaminophen, (+) dizziness, sees spots with HA which are not related to activity, (-) weakness, (+) numbness and tingling in both feet,

(-) changes in speech or memory

Skin: (-) rashes or lesions

Allergies (-)

Psych: (+) Depressed about income, wife is unable to work and is pregnant

7 children ages 2 years-13 years.

**Past Medical History:** Denies problems No preventative care. Only acute care for cold or flu.

**Past Surgical History:** None

**Medications:** None

**Social History:** (-) substance abuse, (+) ETOH, drinks 1-2 beers a day and 5-6 beers on the weekend with family on Saturday and Sunday. Drinks 2 cups of coffee with cream and sugar in the AM, does not exercise except working in the fields picking broccoli, likes to watch TV at night, eats a high carbohydrate diet of rice, beans, potatoes, corn and tortillas (8-10 a day) eats at home, does not eat out often. Drinks water, no sodas or junk food. Reports drinking freshly made jimaca (hibiscus) tea with sugar and fresh cucumber lime drink with sugar three times a week. Rarely eats deserts.

**Family History:** Parents and siblings all living. 2 brothers and 3 sisters. (+) hypertension - father and mother, 2 brothers and 2 sisters (+) diabetes-father, mother, 1 brother and 1sister, (+) coronary heart disease- father, mother, 1 brother, (+) hypercholesterolemia- father, mother, 1 brother, 2 sisters

**Physical Examination – Objective Findings**

Ht. 64 inches Wt. 294 lbs. BP 176/104 mmHg HR: 92 RR: 24 T: 98.8 F

General: Well appearing, well groomed, NAD, looks stated age, morbidly obese

Eyes: PERRLA, Fundoscopy with no AV nicking or copper or silver appearance, no

papilledema, EOMI

Neck: supple, (-) lymphadenopathy, (-) thyromegaly,

CV/Heart: RRR, (-) murmur, rubs or gallops, lifts or heaves, tenderness to palpate, (-) carotid bruits, (-) pedal edema

Lungs: CTA bilaterally, respirations equal and unlabored

Abdomen: (+) BS x 4, soft, round, non-tender, (-) masses, organomegaly, bruits

MS: (+) steady gait, FROM all EXT, no cyanosis, clubbing, pedal pulses present, feet warm, monofilament test abnormal at R great toe, 2+ patellar DTR,

Neuro: CN 2-12 grossly intact, (-) Rhomberg, (-) Pronator drift, (-) Dix Hallpike

Skin: (-) rashes or lesions, color even WNL, hair normal distribution

Psych: appears anxious

**Previous Lab and Diagnostic Testing:** None available. Reports labs done in Mexico 10 years ago, does not remember results.

**Current Lab Test Results -** Fasted 12 hours – completed 1 week prior to clinic

appointment

**Complete Blood Count/ Basic Metabolic Panel**

WBC 5.0

RBC 4.8

Hgb 14

HCT 45.2

MCV 78

MCH 27

Glucose 238

Creatinine 0.6 mg/dl

Carbon dioxide 25 mEq/L

Chloride 100 mEq/L

Potassium 4.0 mEq/L

Sodium 142 mg/dl

Calcium 9 mg/dl

BUN 16 mg/dl

AST 68

ALT 82

Triglycerides 457

Cholesterol 368

LDL 325

HDL 38

Vit D 16

A1c 10.9

TSH 4.95

CRP 6

**UA**

Clear, pale yellow

pH 5.4

Specific gravity 1.021

Protein negative

Glucose 500++

Ketones Neg

Blood Neg

**Cardiology/Endocrine Case Study**

Answer the questions below using current national clinical practice guidelines, your pharmacology course textbook, previous pathophysiology coursework, and other sources such as journal articles to support your answers. Please review the grading rubric that will be used to evaluate your submission (100 points = 20% of total grade)

1. Based on the patient’s labs and the Subjective and Objective data, what are the patient’s diagnoses? (Hint: There are at least 8.)

2. Briefly discuss the pathophysiology of the top three diagnoses.

3. Discuss the guidelines for diabetes management. What is the best drug(s) of choice for this patient? What are the benefits of the drug(s) for this patient? Explain the pharmacological action of the drug(s). Explain the importance of aspirin in diabetes. Describe how these medications work to stabilize and provide optimum health.

 4. Discuss the JNC 8 guidelines for hypertension management. What is the best drug(s) of choice for this patient? What are the benefits of the drug(s) for this patient? Explain the pharmacological action of the drug(s). Describe how these medications work to stabilize and provide optimum health.

5. Discuss the AACE 2017 guidelines for dyslipidemia management. What is the best drug(s) of choice for this patient? What are the benefits of the drug(s) for this patient? Explain the pharmacological action of the drug(s). Describe how these medications work to stabilize and provide optimum health.

6. Discuss non-pharmacological interventions to assist Jose in reaching his optimal health. This includes supplements/alternative/integrative medicine….

7. List factors that increase the patient’s risk for cardiovascular disease (including labs).

Calculate Jose’s 10 year atherosclerotic cardiovascular disease (ASCVD) risk using the Framingham and Mesa calculators.

8. Discuss consequences of obesity as the one major cause of this patient’s problems that if corrected can impact all of his diagnoses. Explain how the related factors of his lifestyle affect his diagnoses. What type of diet is recommended according to the latest research? Is Jose a candidate for bariatric surgery and how does bariatric surgery help?

9. Jose has expressed his inability to afford all of the medications he needs. What medication is required and how can his other diagnoses be treated? List other disciplines that could provide a multidisciplinary team approach to assist Jose in reaching optimal health.

**Cardiology/Endocrinology Case Study Rubric**

| **Criteria** | **Ratings** |
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| This criterion is linked to a Learning OutcomePatient's Diagnoses |

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| **10.0 pts****Proficient**Discusses at least 8 diagnoses for the patient. |

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| This criterion is linked to a Learning OutcomePathophysiology of Diagnoses |

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| **10.0 pts****Proficient**Fully discusses pathophysiology of three diagnoses. |

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| This criterion is linked to a Learning OutcomeDiabetes Management |

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| **10.0 pts****Proficient**Fully address management of diabetes. Lists the best drug(s) of choice for this patient. Discusses the benefits of the drug(s) for this patient and fully explains the pharmacological action of the drug(s). Explains the importance of aspirin in diabetes. Describes how these medications work to stabilize and provide optimum health. |

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| This criterion is linked to a Learning OutcomeHypertension Management |

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| **10.0 pts****Proficient**Fully discusses the JNC 8 guidelines for hypertension management. States the best drug(s) of choice for this patient? Fully addresses the benefits of the drug(s) for this patient. Explains the pharmacological action of the drug(s). Describes how these medications work to stabilize and provide optimum health. |

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| This criterion is linked to a Learning OutcomeDyslipidemia Management |

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| **10.0 pts****Proficient**Fully discusses the AACE 2017 guidelines for dyslipidemia management. Describes the best drug(s) of choice for this patient and the benefits of the drug(s) for this patient Fully explains the pharmacological action of the drug(s). Describes how these medications work to stabilize and provide optimum health. |

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| This criterion is linked to a Learning OutcomeNon-pharmalogical Interventions |

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| **10.0 pts****Proficient**Discusses at least 5 non-pharmacologic interventions that would be beneficial for the patient. |

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| This criterion is linked to a Learning OutcomeRisk for Cardiovascular Disease |

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| **10.0 pts****Proficient**Lists factors that increase the patients risk for cardiovascular disease (including labs). Calculate Joses 10 year atherosclerotic cardiovascular disease (ASCVD) risk using the Framingham and Mesa calculators. |

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| This criterion is linked to a Learning OutcomeConsequences of Obesity |

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| **10.0 pts****Proficient**Fully discusses consequences of obesity as the one major cause of this patients problems that if corrected can impact all of his diagnoses. Explains how the related factors of his lifestyle affect his diagnoses. States what type of diet is recommended according to the latest research. Discusses if Jose is a candidate for bariatric surgery and how bariatric surgery can help.  |

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| This criterion is linked to a Learning OutcomeMedication affordability and Alternative Resources |

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| **10.0 pts****Proficient**Discusses what medication is required and how can his other diagnoses be treated. Lists other disciplines that could provide a multidisciplinary team approach to assist Jose in reaching optimal health.  |

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| This criterion is linked to a Learning OutcomeSpelliing/Grammar |

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| **5.0 pts****Proficient**No spelling or grammatical errors in any postings. |

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| This criterion is linked to a Learning OutcomeAPA Format |

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| **5.0 pts****Proficient**Correct utilization of APA format for font, spacing, indentation, headings, in text citations, and reference list.  |
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| Total | **100 points** |