Midterm Exam

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NUR 4010: Community Health Nursing

New York City College of Technology, Brooklyn

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Part 1

Part A.) See attached PDF titled "Nikolay Yusupov Web of Causation for Diabetes Mellitus" for the diagram.

Diabetes Mellitus

Harrison's Principles of Internal Medicine states Diabetes mellitus (DM) refers to a group of common metabolic disorders that share the phenotype of hyperglycemia. Thus, "several distinct types of DM are caused by a complex interaction of genetics and environmental factors. Depending on the etiology of the DM, factors contributing to hyperglycemia include reduced insulin secretion, decreased glucose utilization, and increased glucose production. DM is classified based on the pathogenic process that leads to hyperglycemia, as opposed to earlier criteria such as age of onset, or type of therapy used." (Fauci & Harrison, 2008) Based on current trends the International Diabetes Federation projects that 592 million individuals will have diabetes by the year 2035. (IDF Diabetes, 2015). Although the prevalence of both type 1 and type 2 DM is increasing worldwide, the prevalence of type 2 DM is rising much more rapidly, presumably because of increasing obesity, reduced activity levels as countries become more industrialized, and the aging of the population. (Fauci & Harrison, 2008).

B. Levels of Prevention

Primary Prevention- Interventions implemented before disease occurs, during the prepathogenic stage of an illness; they include both health promotion behaviors and specific protection behaviors.

Secondary Prevention- Interventions are used during early pathogenesis-that is, after illness has occurred; they include early diagnosis, prompt treatment, and the limitation of disability.

Tertiary Prevention- Interventions used during later pathogenesis-specifically the period of convalescence and rehabilitation; they include reeducation of the client and education of the public. (Holzemer & Klainberg, 2014).

B.1) General cultural, environmental, and socioeconomic conditions (Tertiary Prevention)

1) **Socioeconomic conditions-** Low wage job and/or being unemployed emotional stress may provoke a change in behavior so that individuals no longer adhere to a dietary, exercise, or therapeutic regimen. As a community health nurse CHN, I would approach tertiary prevention by teaching my clients with DM how to address emotional stress with workshops dealing with destress techniques and not to stray from the diet, exercise and therapeutic regimen. I would also contact the local library and a local community college where resume building, online job searching, and professional education and development classes can be held to help educate and find just for the unemployed individuals or those seeking better employment opportunities.

2**) Socioeconomic conditions**- Due to low income, living in an area without access to a supermarket and heathy food choices, lack of clinics that are open late for screening, preventative care and treatment. As a CHN for tertiary prevention, I would hold educational workshops in communities that do not have access to healthy alternatives and try to educate the public how to make healthier food choices when buying meals at the fast food restaurants. In addition, reach out to businesses and local community leaders who can help me facilitate sitting down and proposing an area for supermarket to be built in this community.

3) **General cultural-** Being certain race/ethnicity (e.g., African American, Latino, Native American, Asian American, Pacific Islander). Being from a certain culture you may believe that skinny is not a sign of being healthy and thus you provide more unnecessary food and excess calories to your children which will cause obesity and contribute to DM or worsen preexisting DM. Adhering to certain foods that are customary in that culture such as rice for Asians may also worsen preexisting DM. Thus, as a CHN I would need to be culturally aware and provide culturally sensitive education as to educate on complications of DM. Attempt to make incremental adjustments rather than eradicate the cultural food practices all together which will only garner resistance and non-compliance.

B.2) Social and community influences (Primary Prevention)

1) **Community influences-** Neighborhood is predominantly comprised of fast food chains that serve food high in carbohydrates, fat, sodium. This is where CHN can provide primary prevention my providing a health fair and getting children and young adults involved. Providing

them with vital education so that they can change their dietary habits which can lead to DM down the line. The Diabetes Prevention Program DPP demonstrated that intensive changes in lifestyle diet and exercise for 30 minutes' times per week in individuals with impaired glucose tolerance IGT prevented or delayed the development of Type 2 DM by 58% compared to placebo. (Diabetes Prevention Program, 2017).

2) Community influences- Dangerous neighborhood with gang activity in the recreation parks. The community is unable to go out and exercise in the park due to fear of being assaulted or shot. CHN can provide primary care prevention by holding educational classes for the community on how one can exercise in the comfort of their home if it's not safe to do so in the park. CHN can demonstrate exercises or explain which house chores can burn the necessary calories and provide adequate exercise. In addition, CHN with the help of community leaders can reach out to the police department to help combat gang violence in the park so that the community residents have where they can exercise without fear of assault.

3) Social Influences- Your social circle of friends' places pressure on you to fit in and belong to this group. Thus, you must eat certain foods which may not be appropriate, drink alcohol mixed with carbohydrates etc. If you don't want to be alienated, you must comply with the group to fit in. As a CHN, we know that it's central to the success of primary prevention of diabetes the patient's participation, input, and enthusiasm. Thus, we need to find ways to engage the clients so we can find ways that they can still be part of the group yet still be compliant and not easily coerced to stray from the course.

A.3) Individual lifestyle factors (Secondary Prevention)

1) Individual lifestyle- Decreased energy expenditure with less walking, less exercise and more sedentary lifestyle. Thus, you are becoming more obese which contributes to casuing DM. The 2008 Physical Activity Guidelines for Americans recommend that adults should engage in 150 minutes of moderate intensity or 75 min a week of vigorous intensity aerobic physical activity per week, performed in episodes of at least 10 minutes and preferably spread throughout the week. As CHN I can deliver secondary prevention education by focusing on simple ways to add physical activity into the normal daily routine through leisure activity. Ex: walking, using the stairs, doing housework.

2) Individual lifestyle- Dietary habits with increased energy intake from food that one enjoys and overeats. Consuming larger quantities of food and food that may be very calorie dense filled with fat, alcohol and carbohydrates. The primary focus of diet therapy is to reduce overall calorie consumption. Guidelines from the National Heart, Lung and Blood Institute recommend initiating treatment with a calorie deficit of 500-1000 kcal/day compared with the patient's habitual diet. This reduction is consistent with a goal of losing 1-2 pounds per week. As a CHN, I can provide secondary prevention to those newly diagnosed with DM. That calorie deficit can be instituted through dietary substitutions or alternatives. Examples include choosing smaller portion sizes, eating more fruits and vegetables consuming more whole-grain cereals selecting leaner cuts of meat and skimmed dairy products, reducing consumption of fried foods and other foods with added fats and oils, and drinking water instead of sugar-sweetened beverages. It is important that dietary counseling remain patient centered and that the goals set be practical

realistic, and achievable. (National Heart, Lung and Blood Institute NHLBI, 2017).

3) Individual lifestyle- Not going for annual checkups and clinic appointment thus avoiding it all together. As a CHN I know that the patient with newly diagnosed DM should receive education about nutrition, exercise, care of diabetes during illness, and medications to lower glucose. Along with improved compliance, patient education allows individuals with DM to assume greater responsibility for their care. To provide secondary prevention patient education should be viewed as a continuing process with regular visits for reinforcement and calling the patient personally to remind them of their appointment for clinic visit. In addition, as CHN I would want them to go have an annual foot examination to assess blood flow, pinprick sensation. The "optimal therapy for preventions of amputations is through identification of high-risk patients, education of the patient, and institution of measures to prevent ulceration. High-risk patients should be identified during the routine annual foot examination." (Fauci & Harrison, 2008).

Part 2

A. 8 Community Partners (Stakeholders)

1) Community General Hospital board of trustees as their Emergency Department is overwhelmed and they are getting readmissions for the same complaints and are not being reimbursed by U.S. Centers for Medicare & Medicaid Services CMS for readmit care for same complaint rendered. Thus, they need to seek solutions and alternative revenue to not go bankrupt and cause another hardship to the community. Reimbursement with Telemedicine and Community Paramedicine and nursing services can facilitate that revenue and reduce readmissions for the same complaints.

2) Health care providers (PCPs MD/DO/NP/PA, Nurses, PCTs and Community Paramedics) who are rendering medical care and are burdened with overflow in the ED. As well as those who work in the clinics and the community for home visits. They are vested in finding solutions because bankrupt hospital will mean loss of employment. Thus they will step up and contribute in order to maintain employment and also help the community in need.

3) Politicians: Mayor, Council, Senators, Borough Presidents and Assemblymen who help write the bills so funds can be allocated and thus help build the infrastructure of medical institutions and offer free tuition to help train more PCPs and Nurses who will work in Urban health care community clinics. If we want to expand clinic hours and access to preventative care services, we must attract more health care providers to go into primary care or family practice.

To do so we must incentivize them with free education with the contractual agreement upon completion that they must remain in the community for 3 years and private primary care services in the clinics.

4) Media (TV, Radio, Newspaper, Magazine, Internet etc.) to dissimilate important information to the community on where to seek resources and what is available to them. Community outreach via various media formats is extremely important as not every family has TV, Internet etc. Thus, as CHN it's important to reach out to as many outlets as possible so your message is delivered to the community.

5) Local Pharmacies that will be filling prescriptions to the community. With evening clinic hours and more providers available to the community they will be providing more prescriptions. Thus, the local pharmacies may have to provide evening hours for these clients so they can get their prescriptions filled. CHN can partner with a local pharmacy and see if they expand their evening hours so that clients can fill their prescriptions and be compliant with the treatment.

6) Local Landlords who own land that can serves as a building location for medical institution where new PCP and Nurses will be educated to take on this burden. CHN can partner with the community leaders and local landlords and bring forth the policies and funds necessary to build the infrastructure for future community growth and development.

7) Local schools and youth centers where you will get direct community recruitment for them to become local health care providers and render care to your local community where you grew up and are thus vested in seeing their improvement as these are your friends and relatives. CHN can offer a career education fair and explain what nurses do for the community and hopefully recruit the youth to follow this exiting career path.

8) Parents and family members of children and adult caretakers who are caring for one of their own with asthma or chronic pulmonary disease (COPD and emphysema). With lack of clinics and healthcare coverage is burden to the family. CHN needs to reach out to the family members and see what can be done to alleviate their burden or if they require teaching to help with medication delivery, nebulizer use, etc.

B. Research Resources

1) Community General Hospital Morbidity & Mortality M&M data for asthma and chronic pulmonary disease (COPD and emphysema) and ED census reports. To see how many death are attribute to asthma and COPD and how are we doing to prevent further mortality in said population.

2) Use evidence based practice with peer reviewed studies (quantitative and qualitative) and randomized control trials RCTs. CHN needs strong evidence to get funding and create

necessary change in the community. Below are resources used to gain peer reviewed journals and statistics necessary to make a strong presentation.

MEDLINE with Full Text (EBSCO)

Medical information full text and index on medicine, nursing, dentistry, veterinary medicine, the health care system, pre-clinical sciences. Created by the National Library of Medicine.

CINAHL Complete (EBSCO)

Full-text nursing & allied health journals for more than 1,300 journals indexed in CINAHL. Includes the basic CINAHL database.

Cochrane Library (Wiley)

Full text articles on evidence-based medicine and interventions in health care.

PubMed - NCBI

PubMed comprises more than 27 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to evidence-based medicine and interventions in health care.

3) Data from The Air Pollution and Respiratory Health Branch of the National Center for Environmental Health, Centers for Disease Control and Prevention (CDC) leads CDC's fight against environmental-related respiratory illnesses, including asthma, and studies indoor and outdoor air pollution.

CDC's asthma program focuses on three main activities:

1. **surveillance:** collecting and analyzing data on an ongoing basis to understand when, where, and in whom asthma occurs;

2. **implementing scientifically proven interventions:** ensuring that scientific information is translated into public health practices and programs to reduce the burden of asthma; and
3. **establishing and maintaining partnerships:** ensuring that all stakeholders have the opportunity to be involved in developing, implementing, and evaluating local asthma control programs.

This organization is a tremendous resource for our community data statistics.

4) Tracking State Laws for Health Care Transformations, 2015-2017 NCSL's Health Program seeks to help state legislators and their staff learn about promising health system reforms and policy innovations that promote a more efficient and effective health care system and improve Americans' health. This database of recently enacted laws includes information on state health transformation initiatives and related changes in state statutes, as well as a description of topics and categories of legislation for 2015-2016. As CHN I need to be able to seek out preexisting legislature to help further my plan for this community

C. Four Barriers

Barrier 1: Community General Hospital will be reluctant to provide their own staff and their own pay roll to staff two community clinics. Thus, community health nurse CHN will need to provide objective data, that this action will reduce Emergency Department ED readmission for

the same complaints and reduce reimbursed by U.S. Centers for Medicare & Medicaid Services CMS for readmit nonpayment and fines for the same complaints coming to the ED.

Barrier 2: With low education level in the community and high unemployment it will be very difficult to dissimilate new policy information into community so they can understand. Posting flyers may not be effective, thus a plan of how to inform the community and which media outlets to use is very important. A plan needs to be drafted and implemented to properly dissimilate new information to the community.

Barrier 3: Cultural beliefs and belief of fatalism that events are all predetermined by a higher power. Such beliefs harbor much resistance and reluctance to facilitate change. CHN needs to be culturally aware of all the ethnic groups in this community and provide appropriate teaching.

Barrier 4: Environmental conditions predispose community to respiratory triggers. With high pollution in the community, smoking, roach droppings etc. All can serve as a trigger for reparatory emergency that can send the person back to the ED. Thus CHN will have to devise a plan and work with CDC to curtail environmental hazards plaguing this community.

D. Local and National Policy

Local Policy

Who: Community General Hospital board of trustees

What: Community General Hospital will provide the following staff: 3 PCT's, 2 RN's and 1 PCP (MD/DO, PA, NP) to 2 community clinics.

Where: 2 community clinics in order to be operational from 4:30pm-8:30pm 2 weekdays and 1 weekend (3 evening days)

When: By May 1 of 2017.

Why: The staff is need to render healthcare in 2 clinics in the community during evening hours so everyone in community can receive healthcare, preventative care and screening services. This will offset Community General Hospital Emergency Department and decrease U.S. Centers for Medicare & Medicaid Services CMS fines and non-payment. This change will facilitate access to the clinic during evening hours for those who are employed during the day or cannot make it to clinic during early morning hours.

National Policy

Who: Federal government.

What: Provide funding to build medical colleges and institutions primarily for training primary care providers and nurses who will sign agreements that upon completion they will provide primary care services to the community.

Where: Urban community clinics in order to provide primary care services to the community.

When: By March 10, 2018.

Why: There is shortage of primary care providers and nurses working in urban clinics to provide screenings and preventative care. Thus, Emergency Departments are overfilled and there is not enough staff to provide healthcare services during evening hours.

E. My 4 success outcomes after my proposed plan is set in motion.

1) Bring in environmental health organization Centers for Disease Control and Prevention (CDC). Specifically, The Air Pollution and Respiratory Health Branch (APRHB) which leads CDC's fight against environmental-related respiratory illnesses, including asthma, and studies indoor and outdoor air pollution to collect data establishing the existence of environmental health disparities by July 1, 2017.

Specific: Bring in environmental health organization Centers for Disease Control and Prevention (CDC). Specifically, The Air Pollution and Respiratory Health Branch (APRHB) which leads CDC's fight against environmental-related respiratory illnesses, including asthma, and studies indoor and outdoor air pollution to collect data establishing the existence of environmental health disparities by July 1, 2017.

Measurable: Conduct surveillance and collect data on:

In conjunction with the National Center for Health Statistics and the National Center for Chronic Disease Prevention and Health Promotion, the Air Pollution and Respiratory Health Branch conduct a number of major asthma data collection efforts, including:

1. collection of state-level adult asthma prevalence rates for detailed subgroups through the Behavioral Risk Factor Surveillance System Survey;
2. collection of data on asthma attacks, asthma management, days of work or school lost, emergency room visits, and hospitalizations due to asthma through the National Health Interview Survey;

3. collection of asthma management and control data through development of a National Asthma Survey. This survey is currently implemented as a state-based call-back survey through the Behavioral Risk Factor Surveillance System.

Attainable/Achievable: Begin to see a The Air Pollution and Respiratory Health Branch (APRHB) of CDC conducting environmental community surveillance data collection.

Relevant/ Realistic: Need to establish environmental community data in order to compare it to national average to bring attention to this particular community and make necessary changes.

Time-bound: 4 month to complete this goal.

2) Working with Community General Hospital CGH establish community paramedicine program for discharged patients with asthma and pulmonary disease ED visits to check on their status and medication compliance by May 1, 2017 to reduce ER visits for recurrent complaints.

Specific: Working with Community General Hospital CGH establish community paramedicine program for discharged patients with asthma and pulmonary disease ED visits to check on their status and medication compliance by May 1, 2017 to reduce ER visits for recurrent complaints.

Measurable: Collect Community Paramedic patient care report data from Community General Hospital CGH for home visits to asthma and chronic obstructive pulmonary disease (COPD and emphysema) patients.

Attainable/Achievable: Begin to see community paramedic visits and more patient care reports generated and at the same time see a reduction in patients seen in ER for to asthma and chronic pulmonary disease (COPD and emphysema) with 20% reduction anticipated.

Relevant/ Realistic: With goal #4 in mind and anticipating 20% reduction in ED visits for this subset of disease we need to ensure patients are educated and compliant with treatment.

Time-bound: 3 month to complete this goal.

3) Establish evening hours for 2 local clinics to be open from 4:30pm-8:30pm 2 weekdays and 1 weekend (3 evening days) by May 1, 2017.

Specific: Establish evening hours for 2 local clinics to be open from 4:30pm-8:30pm 2 weekdays and 1 weekend (3 evening days) by May 1, 2017.

Measurable: Schedule meeting and with management and staff once every week to if they are moving toward providing clinic operational hours from 4:30pm-8:30pm 2 weekdays and 1 weekend (3 evening days) by May 1, 2017. As well as discussion, all the problems and issues to move forward.

Attainable/Achievable: Begin to see expanded evening hours for the 2 community clinics with the goal of operational hours from 4:30pm-8:30pm 2 weekdays and 1 weekend (3 evening days) by May 1, 2017

Relevant/ Realistic: Providing convenient hours of community clinics will allow access to get required healthcare treatment.

Time-bound: 3 month to complete this goal.

4) Reduce ER Emergency Room visits at the local Community General Hospital for asthma and chronic obstructive pulmonary disease (COPD and emphysema) by 20% by March 10, 2018.

Specific: Reduce ER Emergency Room visits at Community General Hospital CGH for asthma and chronic obstructive pulmonary disease (COPD and emphysema) by 20% by March 10, 2018.

Measurable: Collect census data from ER at Community General Hospital CGH for chief complaints related to asthma and chronic pulmonary disease (COPD and emphysema) visits.

Attainable/Achievable: Begin to see a reduction in patients seen in ER for to asthma and chronic obstructive pulmonary disease (COPD and emphysema) with 20% reduction anticipated.

Relevant/ Realistic: With goals 1,2,3 in place 20% reduction in ED visits for this subset of disease conditions is relevant and realistic.

Time-bound: 1year to complete this goal.

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