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Integrating preventive cardiology in primary care: The role of nurses, pharmacists, health records, and emergency services

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Abstract--Background: Chronic metabolic and cardiovascular multi-comorbidities are increasing, with cardiovascular disease being the main cause of morbidity and mortality in type 2 diabetes patients. Traditional healthcare systems often lack a "main" specialist coordinating treatment, leading to fragmented care and higher costs. Advances in cardiometabolic pharmacology have blurred lines between specialties, emphasizing the need for a distinct cardiometabolic specialty. This interdisciplinary approach aims to optimize treatment, improve outcomes, and reduce medical expenditure. Aim of Work: The significant prevalence of cardiovascular disease and the concurrent obesity epidemic is exerting an exceptional pressure on the healthcare system. Under the present fragmented care paradigm, patients with cardiometabolic illness get only partial care from several experts, resulting in inadequate therapy, increased expenses, and worse results. Methods: A thorough and methodical search was conducted across several databases, including PubMed (including MEDLINE), CINAHL, EMBASE, and the Cochrane database for systematic reviews. Reference lists of included papers were also examined for relevant research. Results: There is an urgent need for a new treatment paradigm that involves establishing a separate specialty focused on cardiometabolic conditions, together with a dedicated outpatient clinic that provides complete care for these conditions. The cardiometabolic clinic would include a wide array of experts who are relevant to providing complete care. Conclusion: The proposed outpatient clinic aims to promote multidisciplinary cooperation among doctors and provide prevention-focused therapy to patients who are at risk or have already developed cardiometabolic illness.

Keywords---Integrating Preventive Cardiology, Primary Care, Nurses, Pharmacists, Health Records, Emergency Services, Review.

Introduction

The incidence of individuals suffering from chronic metabolic and cardiovascular multi-comorbidities has been consistently rising in recent decades. Cardiovascular disease (CVD) is the primary reason for illness and death in individuals with type 2 diabetes mellitus (T2DM) [1]. Cardiovascular disease (CVD) affects 85.6 million Americans and incurs an annual cost of 219 billion dollars [2]. Frequently, both conditions occur simultaneously, with up to two-

thirds of individuals with cardiovascular disease also having dysglycemia [3]. Nevertheless, metabolic abnormalities in individuals with cardiovascular disease (CVD) often go misdiagnosed and untreated, leading to a greater occurrence of cardiovascular mortality [4]. Cardiometabolic illness is already a significant burden on the healthcare system. When accounting for age and gender, those with diabetes have medical expenses that are 2.3 times greater than those without diabetes [1]. Given the growing rates of obesity, the aging population, and the rising costs of healthcare, it is expected that this trend will continue to grow in the future.

Nevertheless, the current state of our healthcare system hinders the effective treatment of these intricate individuals with cardiometabolic conditions. Within our conventional fragmented care framework, there is no central expert overseeing therapy, since cardiologists and endocrinologists often have little collaboration. Insufficient attention is given to crucial elements of cardiometabolic treatment, such as lifestyle modification and psychiatric counseling. Consequently, patients with cardiometabolic conditions experience treatment that is not well-coordinated, leading to unnecessary repetition of diagnostic tests and increased expenses. Additionally, they are at risk of harmful interactions between medications and, most significantly, adverse cardiovascular events.

Aim of work

Fortunately, we have seen progress in the field of cardiometabolic pharmacology. Novel, evidence-based "cardiometabolic drugs" that were first licensed for the treatment of type 2 diabetes mellitus (T2DM) have shown efficacy in treating both diabetes and cardiovascular disease (CVD). These medications for cardiometabolic conditions increasingly obscure the distinctions between conventional medical specializations, highlighting the need to reconsider existing fragmented care paradigms.

To address this pressing problem, we suggest creating a specialized field of medicine focused on the unique requirements of patients with cardiometabolic conditions. The education of cardiometabolic doctors would begin at an early stage, with fundamental principles of cardiometabolic illness being addressed throughout medical school. Physicians who have completed a standard internal residency program may pursue specialization in cardiometabolic medicine by enrolling in a 2–3-year training program specifically designed for cardiometabolic specialists. Ultimately, the cardiometabolic physician would be able to practice in a specialized outpatient clinic exclusively focused on treating patients with cardiometabolic conditions (Figure 1). This book presents a concept for a specialized clinic designed specifically to meet the requirements of patients with cardiometabolic conditions. This clinic will have a well-organized team of experts, including a cardiometabolic physician, cardiometabolic nurses, dietitians, rehabilitation doctors, certified diabetes care and education specialist (CDCES), and psychologists. By using a cooperative and multidisciplinary approach to this care model, our goal is to enhance the treatment of patients with cardiometabolic conditions, achieve better results, and lower healthcare costs.

Current Patterns in the Study of Cardiometabolic Disease Epidemiology

The current patterns of mortality associated to cardiovascular disease (CVD) are worrisome. Although the United States has seen a significant decline in cardiovascular disease (CVD) mortality over the previous several decades, this positive trend seems to be diminishing. Nevertheless, the death rate for cardiovascular disease (CVD) adjusted for age has stayed constant at 0.5% per year, although other fields have shown a consistent decline in mortality [5,6]. For instance, cancer mortality declined by 1.5% annually from 2000 to 2015. Undoubtedly, cardiovascular disease (CVD) is responsible for 17.3 million fatalities annually on a worldwide scale. However, research conducted in 2014 predicts that the number of deaths caused by CVD would escalate to more than 23.6 million per year by 2030 [7]. The diminished progress in reducing cardiovascular disease (CVD) mortality is mostly due to the worrying rise in the incidence of obesity. According to data, 39.4% of individuals in the United States who are 20 years old or older are classified as obese [8]. By 2030, projections indicate that the prevalence of obesity in the United States will reach 50% [9]. Individuals who are obese, especially those with metabolic syndrome, have a greater likelihood of developing diabetes and experiencing negative cardiovascular disease outcomes [10].

Obesity significantly contributes to the development of diabetes. 11% of individuals in the United States have been diagnosed with diabetes, while an additional 37.6% have been identified as pre-diabetic [11]. According to data from the National Health and Nutrition Examination Survey (NHANES), there has been a decline in blood glucose health among obese adults over the last thirty years, resulting in a deterioration of cardiovascular disease (CVD) [12]. Individuals diagnosed with diabetes have a twofold increased chance of developing coronary heart disease (CHD) and a 2.3-fold increased risk of experiencing an ischemic stroke [13]. Approximations indicate that diabetes is responsible for 10% of vascular fatalities, and two-thirds of people with type 2 diabetes mellitus (T2DM) die from cardiovascular disease (CVD) [13, 14]. Undoubtedly, diabetes often goes unnoticed in people with cardiovascular disease. According to research on left ventricular dysfunction, 11% of individuals with heart failure had undetected type 2 diabetes mellitus [15].

In addition to cardiovascular comorbidities, chronic kidney disease (CKD) is a significant co-diagnosis associated with diabetes. Diabetes is the main factor contributing to chronic kidney disease (CKD) in industrialized countries. Individuals who have both diabetes and CKD are at a much higher risk of cardiovascular disease (CVD) [16, 17]. Albuminuria is linked to an atherogenic lipoprotein profile characterized by increased levels of triglycerides (TGs), low levels of high-density lipoprotein cholesterol (HDL-C), and a change in low-density lipoprotein cholesterol (LDL-C), with a greater percentage of tiny, high-density lipoproteins [18, 19]. Nevertheless, the existing recommendations lack consistency when it comes to evaluating the cardiovascular risk of patients with CKD, which hinders the implementation of appropriate preventive medication for cardiovascular disease.

Progress in the development of cardiometabolic drugs and their restricted use in clinical practice

Fortunately, we have seen a significant change in the development of pharmaceutical medications that specifically target Type 2 Diabetes Mellitus (T2DM) and Cardiovascular Disease (CVD). Cardiovascular outcome trials (CVOTs) have shown that SGLT-2 inhibitors and GLP1-RAs provide cardiovascular advantages for individuals with type 2 diabetes mellitus (T2DM), and in some instances, even for those without T2DM. The Food and Drug Administration (FDA) has granted approval for the use of antidiabetic drugs to reduce the likelihood of a combination of significant adverse cardiac events (liraglutide, canagliflozin, semaglutide, dulaglutide), cardiovascular mortality (empagliflozin), and heart failure (dapagliflozin) [20-25]. This suggestion is reiterated in recent authoritative recommendations. Studies have shown that SGLT-2 inhibitors have specific advantages for individuals with heart failure (HF) and chronic kidney disease (CKD). Therefore, it is recommended that patients with type 2 diabetes mellitus (T2DM) and CKD or HF be prescribed these medications [21, 26]. If obesity is a primary issue, it is suggested to use GLP-1 RAs, since they are presently the most effective anti-diabetic medication for promoting weight reduction [27].

Nevertheless, despite the endorsement of guidelines and the approval of the FDA, many medications that are supported by evidence are not used to their full potential. A recent cohort research examining the current use of guideline-recommended medicine among patients with atherosclerotic cardiovascular disease (ASCVD) and diabetes revealed that only 9.0% of participants were prescribed SGLT-2 inhibitors, while 7.9% were prescribed GLP-1 RAs. Investigators found that only 6.9% of patients had adequate pharmacological treatment [28]. These medications provide a crucial opportunity to enhance treatment and decrease cardiovascular events in these individuals. We contend that providing proper training to doctors in the treatment of cardiometabolic patients might reduce obstacles to the prescription of these medications.

Existing Care Models with Limited Integration

Although the pharmaceutical industry has made advancements in the development of "cardiometabolic" drugs, there is still a lack of integration between cardiology and endocrinology programs in terms of physician education and clinical treatment. There is a debate over whether primary care doctors should possess the skills necessary to effectively manage treatment for patients with both ASCVD (atherosclerotic cardiovascular disease) and diabetes. Primary care clinicians sometimes struggle with limited time and many demands during normal primary care visits, which makes it difficult for them to deliver complete treatment for patients with cardiometabolic conditions [29]. Additionally, we are now experiencing a significant scarcity of primary care providers. According to a study, a mere 25% of medical students want to pursue a career in primary care [30].

Although it may seem logical for cardiologists to take charge of the care of cardiometabolic patients, their conventional training in cardiology does not provide them with the necessary skills for managing blood sugar levels, prescribing weight reduction medications, or providing sufficient guidance on lifestyle modifications. Cardiologists may have unease while monitoring the adverse effects of new cardiometabolic medications such as SGLT-2 inhibitors and GLP1-RAs, as well as managing the intricate treatment plans including ASCVD treatments like PCSK9 inhibitors, beta blockers, renin-angiotensin-aldosterone system inhibitors, or anticoagulant regimens. Due to the fragmented nature of the healthcare provided, less than 20% of patients with diabetes are able to achieve all three suggested objectives for HbA1c, blood pressure, and low-density lipoprotein-cholesterol [31]. In conclusion, addressing this matter requires the involvement of skilled professionals and a healthcare team specializing in cardiometabolic illness. They should give thorough and evidence-based therapy for these intricate individuals, following established guidelines.

Cardiometabolic Medicine Education Medical School

Cardiometabolic medicine should be included as a fundamental component of medical education, allowing interested students to pursue specialized study in this field during their residency. Contemporary medical education focuses on teaching diseases as individual entities, rather than highlighting the fact that chronic disorders often coexist and people with many health issues are common. Combining the teaching of ASCVD and T1DM/T2DM in a comprehensive cardiometabolic course, rather than in separate modules, will enhance students' understanding of the interconnectedness of these diseases and better equip them to care for patients with multiple health conditions. Cardiometabolic medicine education in medical school should include instruction on lifestyle counseling and behavioral medicine, which is currently lacking in existing curriculum.

The Cardiometabolic Specialist

After completing medical school and undergoing 2-3 years of training in general internal medicine, we propose the establishment of a cardiometabolic training program. This program would include several medical specializations such as cardiology, endocrinology, and other important fields that focus on the treatment of patients with cardiometabolic conditions. The cardiology component of this curriculum would primarily concentrate on preventing and managing atherosclerotic cardiovascular disease (ASCVD) in both primary and secondary settings. However, this program does not include training in electrophysiology, interventional cardiology, severe heart failure, or cardiac transplantation. Participating in rotations in hypertension clinics and vascular medicine would provide the necessary skills to effectively treat severe hypertension.

Physicians may accurately identify resistant hypertension by ruling out pseudoresistance, screening for secondary hypertension, and evaluating organ damage. Compared to conventional training for endocrinology specialists, there would be a greater focus on teachings on the intricate pharmaceutical treatment of resistant hypertension and lifestyle management. Furthermore, acquiring

knowledge in hepatology will enhance the understanding of cardiometabolic medicine by exploring the connection between non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH) and atherosclerotic cardiovascular disease (ASCVD) [32]. The endocrinology component of this specialized program will concentrate on topics such as obesity, metabolic syndrome, type 1 and type 2 diabetes mellitus, illnesses related to lipids and lipoproteins, endocrine-related causes of hypertension, and lifestyle factors. Physicians would get training in advanced glucose control, specifically focusing on the delivery of basal/bolus insulin, insulin infusion pumps, and glucose sensors. The cardiometabolic training program will not address other typical issues related to illnesses of the thyroid, hypothalamic-pituitary-adrenal axis, reproductive endocrinology, or metabolic bone disease, including parathyroid problems.

Aside from receiving instruction in endocrinology and cardiology, the program would include sufficient time for training in lifestyle counseling. Physicians would possess expertise in smoking cessation treatment, exercise physiology, and nutrition counseling. Behavioral intervention training aims to provide trainees with the necessary skills to improve treatment adherence, better physician-patient communication, and effectively conduct motivational interviewing. A significant portion of the training program will be dedicated to the most relevant subjects in the field of obesity medicine, with a specific emphasis on NAFLD and NASH. Physicians would get training in obesity pharmacology, as well as guidance on when and how to recommend patients to bariatric surgery and treat them after the operation, via rotations in obesity clinics.

The Cardiometabolic Clinic The Cardiometabolic Team

Ultimately, our plan involves creating a cardiometabolic outpatient clinic that will be staffed by a diverse team of experts, including a cardiometabolic physician, behavioral psychologists, nutritionists, certified diabetes care and education specialists (CDCES), and specialized rehabilitation doctors. This group of specialists, together with three cardiometabolic nurses, would come together to create a united and collaborative multidisciplinary team. The management of the cardiometabolic clinic would be overseen by two administrative professionals. In a meticulously organized clinic with a high patient load, this is the minimum staffing need, which may be increased as necessary. Given that the clinic offers practical training, students and residents would be warmly welcomed as members of the team.

Logistical considerations

The cardiometabolic nurse would evaluate and prioritize incoming patients, doing an initial examination to determine the specific sort of healthcare professional needed for each patient. Triage would include doing cardiovascular risk assessment, including cardiac imaging and basic bloodwork, where necessary. A customized treatment plan for the patient would be developed after consulting with the cardiometabolic specialist. By using this comprehensive evaluation of patients, people at a greater risk may be promptly recognized. The cardiometabolic clinic is designed as a continuous care paradigm, where patients

are scheduled for frequent check-ups and counseling sessions after their initial referral.

The effective treatment of complicated cardiometabolic patients depends on the good cooperation among the team members of the cardiometabolic clinic. According to other medical specializations, a multidisciplinary approach is considered the most effective technique for managing difficult patients [33]. To promote this strategy, regular team meetings should be held to review treatment strategies and the latest research findings on cardiometabolic illness. A meta-analysis has shown that inadequate coordination and information exchange among medical team members led to decreased patient satisfaction in outpatient clinical settings [34]. According to a study conducted on chronically sick persons in the United States, 30% of participants reported instances of either missing medical records or duplication of tests while receiving outpatient care [35]. An efficiently organized cardiometabolic outpatient clinic will decrease such mistakes, enhancing result and patient satisfaction.

Specialized areas of expertise used in the clinic Specialist in the field of cardiometabolic health

The major emphasis of a cardiometabolic physician's practice is the prevention of cardiovascular disease (CVD) via a combination of endocrinology and cardiology. During the first stages of therapy, cardiovascular imaging techniques such as echocardiography, stress testing, and coronary computed tomography may be used to evaluate atherosclerotic cardiovascular disease (ASCVD). These imaging methods are tailored to each person and may help in making detailed judgments about cardiovascular risk. The cardiometabolic clinic would furthermore provide transthoracic echocardiography as a means to promptly and simply evaluate individuals with suspected structural heart problems. Transesophageal echocardiography, magnetic resonance imaging, and nuclear imaging are not within the expertise of the cardiometabolic physician. In addition, the cardiometabolic physician would be responsible for overseeing lipid management and would possess expertise in treating patients with complicated conditions such as severe hypertriglyceridemia, statin intolerance, or inherited lipid and lipoprotein abnormalities such as familial hypercholesterolemia.

Patients would also get treatment for hypertension, including cases of resistant hypertension. The complex array of factors contributing to resistant hypertension necessitates a methodical and interdisciplinary approach in both diagnosing and treating the condition [36]. This might be achieved via the efficient collaboration of the comprehensive cardiometabolic clinic team. An important aspect of the cardiometabolic physician's responsibilities include evaluating CKD and its related cardiovascular risk by measuring albuminuria. A cardiometabolic specialist with competence in both endocrinology and cardiology may effectively treat chronic kidney disease (CKD) and any associated cardiovascular conditions based on the latest information. Physicians would possess expertise in effectively managing blood sugar levels in patients, including prescribing medications such as metformin, GLP-1 RAs, SGLT-2 inhibitors, thiazolidinediones, and other drug classes often used to treat diabetes. They would also be skilled in devising

intricate insulin delivery plans and using modern technology for diabetes management. The cardiometabolic specialist would have the responsibility of controlling obesity by prescribing a personalized approach to lifestyle management, weight reduction drugs, and determining when and how to send patients to metabolic surgeons. They would also possess expertise in monitoring patients after bariatric surgery.

The Cardiometabolic Nurse

Our objective is for the cardiometabolic nurse to collaborate closely with the cardiometabolic physician. Research indicates that the quality of diabetic and cardiovascular disease treatment provided by doctors and advanced care professionals (such as nurse practitioners or physician assistants) in a primary care context was similar [37]. The cardiometabolic nurse would provide an initial thorough health evaluation, which includes evaluating the patient's cardiac and metabolic history, screening for risk factors, conducting blood tests, and making referrals for cardiac imaging testing. Following the consultation with the cardiometabolic specialist, the cardiometabolic nurse will communicate with patients to review their laboratory and imaging findings. Additionally, the nurse will assist patients in scheduling follow-up visits and, if needed, refer them to additional subspecialists. In accordance with the continuity of care approach, nurses would periodically communicate with patients to ask about the status of their treatment and remind them of upcoming visits.

As the cardiometabolic clinic expands, clerks will assume responsibility for arranging regular appointments, while cardiometabolic nurses will assure the ongoing care of patients by reviewing their lifestyle goals and progress and determining the need for follow-up visits or referrals. Intensive lifestyle intervention should be an integral component of the new model of treatment in the cardiometabolic clinic, with the aim of preventing health issues. During lifestyle counseling meetings, nurses will engage in discussions with patients on exercise and food, as well as develop strategies to help patients quit smoking. For some patients, these lifestyle counseling sessions will be enough. If patients need more rigorous lifestyle changes, the cardiometabolic nurse has the option to send them to a behavioral psychologist, dietitian, or exercise physiologist. A high-quality lifestyle counseling program is essential for effectively treating cardiometabolic illness and will set this clinic apart from competing programs. Approximately 40% of fatalities in the United States are linked to unhealthy lifestyle choices, while doctors only provide lifestyle counseling in 34% of instances [38, 39]. The significance of doctors in conducting thorough lifestyle assessments for patients with cardiovascular disease has been previously highlighted [40].

Psychologist specializing in the study of human behavior

Certain individuals may need frequent appointments with a behavioral psychologist. Cardiovascular disease (CVD) outcomes are strongly associated with psychosocial variables. Depression is a recognized factor that increases the risk of coronary heart disease (CHD) and heart failure (HF), and it is also a significant health condition that often occurs with diabetes [41, 42]. Behavioral modification

treatment would also target noncompliance with prescribed medicines. According to a study, only 50% of individuals without coronary heart disease (CHD) and 33% of patients with CHD follow their recommended medication regimen [43]. Behavioral change psychologists use cognitive behavioral therapy approaches and motivational interviewing to encourage enduring changes in patients' exercise and eating habits and accelerate smoking cessation. Research indicates that receiving organized behavioral assistance from a psychologist professional is more successful in helping individuals quit smoking than to receiving counseling from nurse practitioners or pharmacists [44]. Smoking cessation medicine works in combination with behavioral advice and should be prescribed to patients [45].

Experts in the field of nutrition

Nutritionists play a crucial role in managing lifestyle and must be accessible to provide guidance to patients on dietary treatments for optimizing cardiometabolic health. It is widely agreed upon that a diet that protects the heart includes a wide variety of nutritious foods and is one of the most effective ways to prevent and cure cardiovascular disease (CVD), obesity, and diabetes [46]. The DASH (dietary strategy to stop hypertension) diet and Mediterranean style diets have been shown to decrease the risk of ASCVD, improve blood lipids and blood pressure, and reduce inflammation [47, 48]. Research indicates that tailoring dietary interventions to individual requirements is more effective than prescribing a set distribution of macronutrients and micronutrients for every patient with diabetes. Therefore, while providing dietary advice, it is important to evaluate the presence of other medical conditions, the individual's present eating habits, personal preferences, and the influence of sociocultural factors. Patients with diabetes, specifically, benefit from consultations with nutritionists, since selecting appropriate diets is often the most difficult aspect of their therapy. Diabetes-specific medical nutrition treatment (MNT) is very successful and has received the highest level of recommendation (A-level) from the ADA Standards of Medical Care 2020 [49]. As explained by a licensed nutritionist, Medical Nutrition Therapy (MNT) has been shown to result in a reduction in HbA1C levels ranging from 0.3 to 2% in persons with Type 2 Diabetes Mellitus (T2DM) and 1.0-1.9% in patients with Type 1 Diabetes Mellitus (T1DM) [50].

Accredited Diabetes Care and Education Specialist

The Certified Diabetes Care and Education Specialist (CDCES) will be an essential member of the cardiometabolic team. The main objective of diabetes education is to impart information and skills that enable individuals to engage in self-care activities and make well-informed choices about their self-management. Diabetes self-management education and support (DSMES) is a kind of lifestyle management that has been linked to reduced HbA1c levels, decreased risk of all-cause mortality, and enhanced quality of life [51-53]. Although there is much data supporting the advantages of DSMES (Diabetes Self-Management Education and Support) and its B-level guideline recommendation, this service is not being used to its full potential. A mere 6.8% of individuals with private insurance and 5% of Medicare beneficiaries who have diabetes participate in diabetes education programs, despite the fact that these programs are covered by the majority of

insurance plans [54, 55]. By incorporating CDCES (Certified Diabetes treatment and Education Specialist) into our cardiometabolic clinic, our goal is to ensure that diabetes self-management and education become a regular and standardized component of diabetes treatment.

Physicians specializing in rehabilitation medicine.

Individuals who have had past cardiac incidents would have the opportunity to consult with an expert in cardiac rehabilitation. Given the decreasing length of hospital stays for severe cardiovascular incidents, the significance of outpatient rehabilitation is increasing. However, only a small percentage (14-35%) of eligible patients with prior myocardial infarction (MI) actually engaged in cardiac rehabilitation programs. However, the participation rate tends to be greater when patients are specifically directed to rehabilitation institutions. Incorporating rehabilitation facilities within the cardiometabolic clinic and integrating them into the standardized treatment program will enhance the use of rehabilitation services and enhance the overall treatment results.

Pharmacist

The inclusion of clinical pharmacists in primary care settings led to a considerable rise in the proportion of patients with well-managed hypertension and a decrease in healthcare costs [57]. Collaborative therapies that include many disciplines, as those used in the cardiometabolic clinic, have shown to be very beneficial in enhancing outcomes. The findings indicate that including pharmacists or nurses into team-based treatment is the most effective approach for achieving good blood pressure management [58]. In addition to overseeing intricate prescription regimens, pharmacists would provide support in laborious duties, such as composing appeal letters for non-formulary pharmaceuticals like the PSCK9 inhibitor treatments. Pharmacists may enhance medication adherence by decreasing drug expense, which is a significant factor contributing to non-adherence [59]. Pharmacists working in cardiac out-patient clinics used cost-saving measures such as discount programs and copay interventions, leading to an annual cost avoidance of \$852 per patient [60].

Referral of a patient

Patients would be referred by primary care doctors, endocrinologists, and cardiologists who are either overburdened or lack sufficient knowledge in certain areas of cardiometabolic medicine. In addition, the cardiometabolic clinic would oversee postoperative treatment after cardiometabolic surgery, such as bariatric, vascular, or cardiothoracic procedures, as part of the patient's rehabilitation regimen. Nurse practitioners have the ability to initiate patient referrals and provide patients with information about the advantages of the cardiometabolic clinic.

Conclusion

Developing a new care model to effectively treat patients with cardiometabolic illness is a pressing need within our existing healthcare systems. The

cardiometabolic clinic aims to promote multidisciplinary cooperation among various clinicians in order to provide a complete therapeutic approach for patients with cardiometabolic conditions. The recognition of cardiometabolic medicine as a separate and specialized field of medicine requires approval from the American Board of Internal Medicine. Prior to that time, it would be beneficial to include cardiometabolic medicine modules into medical school curricula, as well as provide ongoing medical education (CME) and other certification programs in cardiometabolic medicine for doctors. Subsequently, the cardiometabolic physician training program must thoroughly establish and effectively instruct cardiometabolic specialists. In order to establish a cardiometabolic clinic, it is important to conduct a thorough examination of financial models and management techniques specific to this context. Additional study is necessary to investigate the advantages of preventative care clinics on patient experience and results. Upon establishing the cardiometabolic clinic, our objective is to further develop this framework by promoting research in the realm of cardiometabolic medicine.

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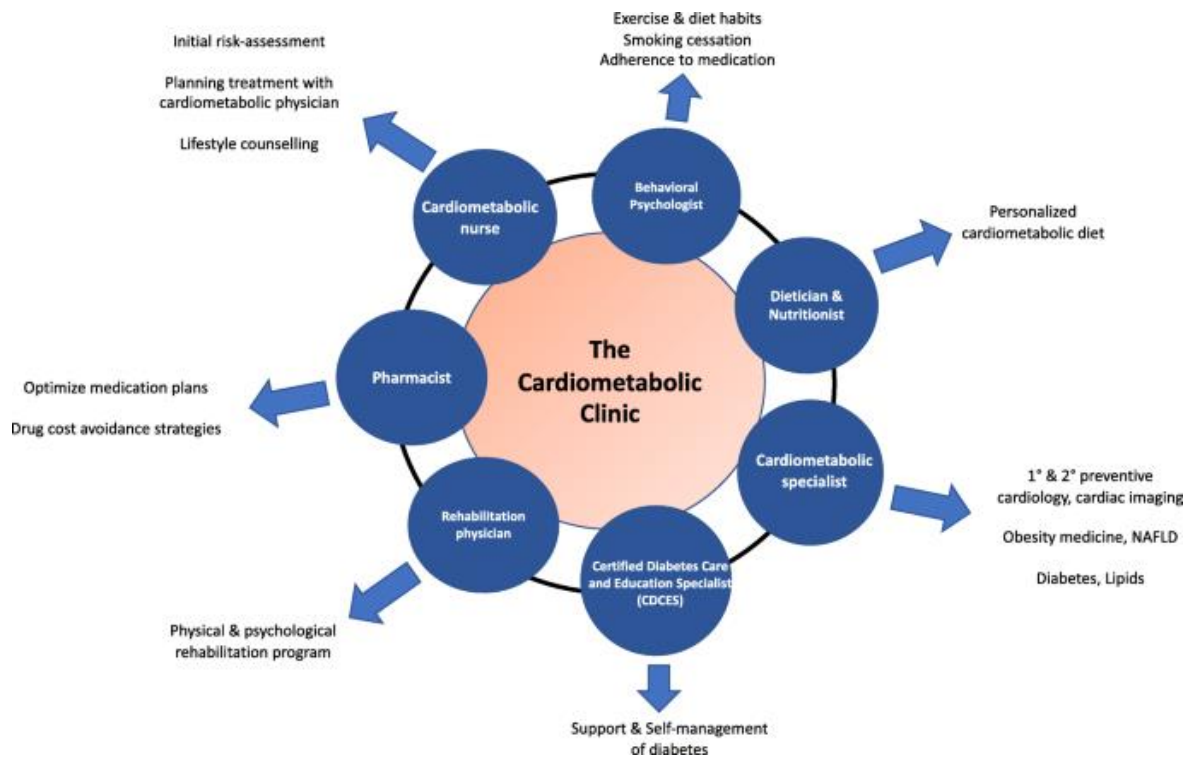


Figure 1. The clinic specializing in the diagnosis and treatment of conditions related to cardiovascular health and metabolic disorders.

دمج طب القلب الوقائي في الرعاية الأولية: دور الممرضين والصيادلة وسجلات الصحة والخدمات الطارئة

الملخص

الخلفية - تزداد الأمراض المزمنة متعددة الأمراض الأيضية والقلبية، حيث تُعتبر الأمراض القلبية السبب الرئيسي للمراضة والوفيات لدى مرضى السكري من النوع الثاني. غالبًا ما تفتقر أنظمة الرعاية الصحية التقليدية إلى "متخصص رئيسي" يقوم بتنسيق العلاج، مما يؤدي إلى رعاية مجزأة وزيادة التكاليف. لقد أدت التطورات في علم الأدوية القلبية الأيضية إلى تداخل الحدود بين التخصصات، مما يبرز الحاجة إلى تخصص قلوب وأيض متميز. تهدف هذه المقاربة متعددة التخصصات إلى تحسين العلاج، وتحسين النتائج، وتقليل النفقات الطبية.

هدف العمل - إن الانتشار الكبير للأمراض القلبية وبياء السمنة المترامن يضغظ بشكل استثنائي على نظام الرعاية الصحية. في ظل نموذج الرعاية المجزأ الحالي، يحصل المرضى الذين يعانون من الأمراض القلبية الأيضية على رعاية جزئية فقط من عدة خبراء، مما يؤدي إلى علاج غير كاف، وزيادة النفقات، ونتائج أسوأ.

الطرق - تم إجراء بحث شامل ومنهجي عبر عدة قواعد بيانات، بما في ذلك PubMed بما في ذلك MEDLINE و CINAHL و EMBASE وقاعدة بيانات Cochrane للمراجعات النظامية. كما تم فحص قوائم المراجع للأوراق المشمولة بحثًا عن أبحاث ذات صلة.

النتائج - هناك حاجة ملحة لنموذج علاج جديد يتضمن إنشاء تخصص منفصل يركز على الحالات القلبية الأيضية، جنبًا إلى جنب مع عيادة خارجية مخصصة تقدم رعاية كاملة لهذه الحالات. ستشمل عيادة القلب والأيض مجموعة واسعة من الخبراء المعنيين بتقديم رعاية شاملة.

الخاتمة - تهدف العيادة الخارجية المقترحة إلى تعزيز التعاون متعدد التخصصات بين الأطباء وتقديم علاج يركز على الوقاية للمرضى المعرضين للخطر أو الذين قد تطورت لديهم بالفعل الأمراض القلبية الأيضية.