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Descriptive Report

A Case Study of Complex Care Management at a Student-Run Free Clinic

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Abstract

Free clinics are an essential part of the United States health care safety net, and student-run free clinics comprise a significant proportion of free clinics nationally. These clinics operate with limited resources but see a population of medically and socially complex patients. Complex care management is a spectrum of care models targeting high-need, high-cost patients designed to improve outcomes and reduce overutilization of health care which have been implemented in many health care settings. Common features of care management programs include patient selection, specialized care managers, and multidisciplinary medical teams. Patients seen at student-run free clinics would benefit from the principles of complex care management. The principles of complex care management have been incorporated into patient care at the University of Michigan Student-Run Free Clinic (UMSRFC) as part of a pilot care management protocol. Patients seen from May 2016 through April 2017 during the first year of the program's implementation were included in this descriptive report. Approximately 30 patients out of 208 unique patients seen from May 2016-April 2017 were considered complex and managed according to this protocol. Three representative patients were selected as illustrative examples by the authors and their care is described. Features that complicated the care of these patients included uninsured status, insurance ineligibility, poor health literacy, inability to afford medications, multiple comorbid chronic health conditions, mental health disorders, and difficulty with telephone communication. Their outcomes included one patient being successfully transitioned to established health care systems, one patient establishing continuity of care at the UMSRFC with improved management of chronic health conditions, and one patient being lost to follow up. Principles of complex care management may be able to be adapted to fit the limitations of the student-run free clinic model. The implementation of these programs may improve health care outcomes for patients with complex needs.

Introduction

Free clinics form a significant part of the health care safety net, serving as an essential resource for 1.8 million Americans.[1] Even following the passage of the Affordable Care Act, free clinics continue to be vital to meeting the healthcare needs of un- or under-insured patients.[2] Student-run free clinics (SRFCs) comprise a significant proportion of these, with over 110 SRFCs currently operating.[3]

SRFCs operate with minimal budgets and rely upon volunteered expertise from physicians, medical students, and other health personnel.[3] Frequent turnover of leadership and intermittent involvement by volunteer health care providers make continuity of care at SRFCs challenging. Despite these limitations, SRFCs provide care for medically and socially complex patients who face many barriers to traditional health care including lack of insurance, racial or ethnic minority status, immigration status, lack of English proficiency, and low income.[1] Such barriers to care often lead to late and more medically complex presentation of disease.[4,5]

Complex care management (CCM) is a

spectrum of care models targeting high-need, high-cost patients—patients with multiple chronic health conditions, functional limitations, and/or unmet social needs[6]—designed to improve outcomes and reduce overutilization of health care.[7] Features of these patients include personal history of trauma, substance use disorders, mental illness, cognitive deficits, and inability to afford transportation, stable housing, healthy food, and medications.[8] Care management is defined as "a set of activities designed to assist patients and their support systems in managing medical conditions and related psychosocial problems."[6]

Traditionally, CCM involves programs in a variety of healthcare settings that incorporate several common characteristics: patient selection, person-to-person encounters, home visits, specialized care managers, multidisciplinary teams that include physicians, presence of informal caregivers, and use of coaching.[6] Care managers within CCM programs have a proactive approach, including visits to homes or shelters, accompanying the patient to their appointments, and coordination of all health providers. CCM in the primary care setting has consistently shown improved quality of care.[9] However, the widespread implementation of CCM in the primary care setting has been limited by financial barriers, lack of integration and communication between medical providers, small size and geographic isolation of many primary care practices, and lack of specialized training.[10]

Many patients at SRFCs are likely to benefit from these principles, but there are challenges in the implementation of a formal CCM program at an SRFC. This descriptive report discusses how the University of Michigan Student-Run Free Clinic (UMSRFC) has incorporated principles of CCM in its patient care protocols.

Clinic Overview

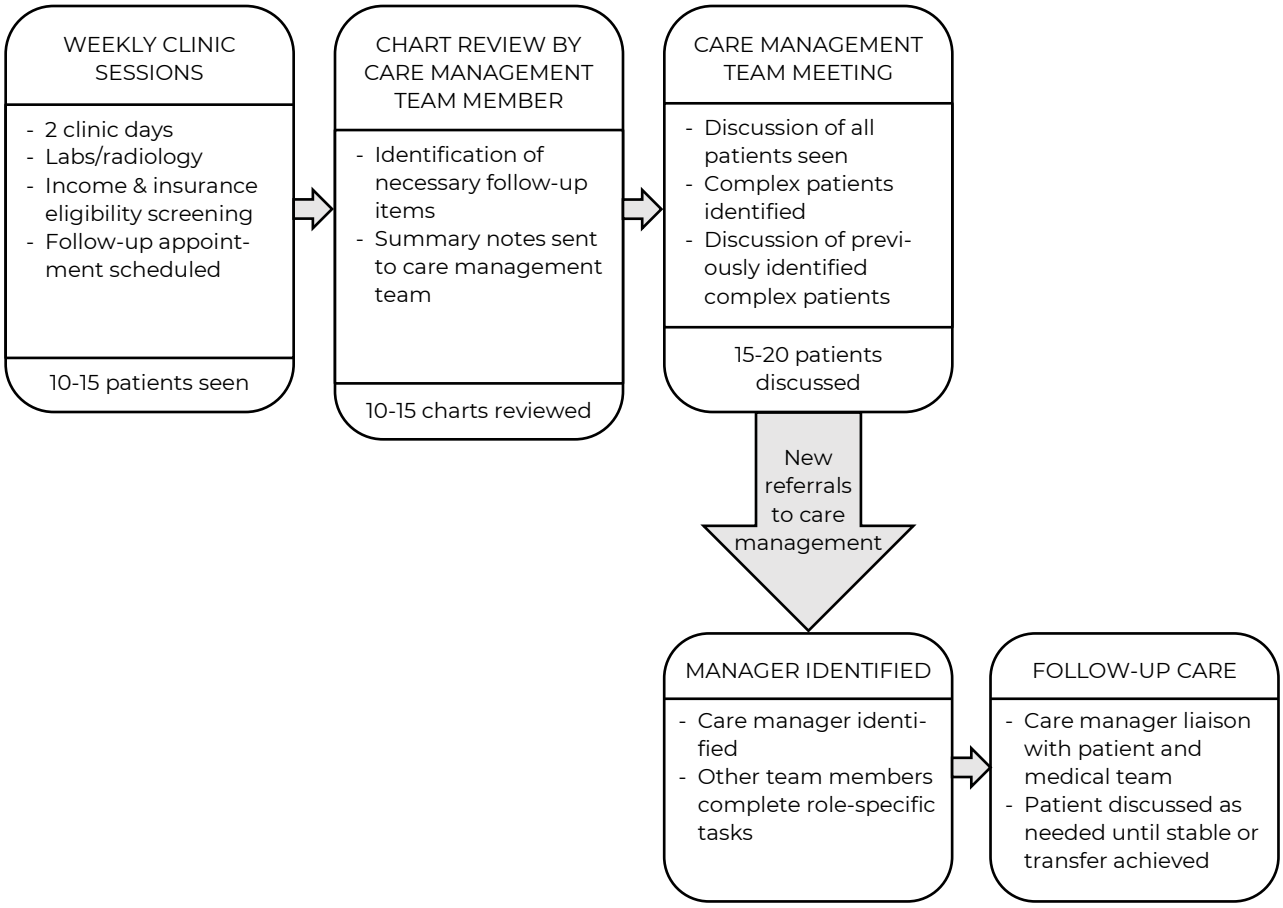
In 2010 the UMSRFC was established to serve uninsured patients in a rural community approximately 35 minutes from the university. Ninety-seven percent of the area residents are white, 2.3% Latino, and 7.5% of those <65 years old are uninsured. The UMSRFC provides primary care, women's health, psychiatric services, and insurance counseling to adult patients. The clinic has been held weekly from 2011 through 2016, and twice weekly since 2016. Patients are seen by a team of preclinical and clinical students and subsequently seen by a physician or nurse practitioner. Selected laboratory and radiology services are provided at no cost by the University of Michigan (UM). Day to day management of the clinic is facilitated by a leadership team of first year medical students who manage incoming laboratory results, patient scheduling, and insurance counseling as well as other administrative roles. All activities of the clinic are overseen by a medical director and an advisory board.

Intervention

Care Management Program at UMSRFC

The leadership team introduced a pilot CCM program in 2016 after recognizing that there was a significant number of patients whose combination of medical and social circumstances required time consuming follow-up outside of normal clinic hours. Specifically, the program involves a team of UMSRFC student leadership members, including two scheduling coordinators, two laboratory follow-up coordinators, and two social services coordinators, that is responsible for coordinating care longitudinally, referred to here as the care management team. Each week, all six members meet to discuss patients seen in clinic the previous week, identify patients with complex care needs based on discussion and consensus, and track patients longitudinally who have been discussed previously. A rotating member of the team reviews each patient's chart and writes a summary of follow-up tasks including scheduling and laboratory and social services notes. At the weekly meeting, the care management team reviews these notes, discusses any additional unmet needs, and identifies complex cases. The member with the most familiarity with the selected patient is established as the care manager and coordinates follow-up tasks on an ongoing basis. The patient is discussed with the team at subsequent meetings, as needed (Figure 1). The program was designed to incorporate several key principles of CCM to improve the quality and consistency of follow up for patients and reduce the time students spent on individual

Figure 1. Care Management Workflow



complex cases. Approximately 30 patients were included in the program during its first year of implementation. Three of these patients were selected by consensus among the authors as the most illustrative examples of the protocol.

Key Elements of the Model

Several key features and resources allow the UMSRFC to provide patients with care for complex conditions.

a. Consulting Specialists: Through a relationship with faculty at UM, the care management team can consult with volunteer physicians and other specialists directly through email or using a 24-hour phone consultation service.
b. Nurse Practitioner Continuity Team: Wednesday clinic days are supervised by the same Nurse Practitioner faculty each week which allows for continuity of care for patients with complex medical needs.
c. Laboratory and Radiology Services: All UMSRFC patients have access to free laboratory and basic radiology services.
d. Insurance and Charity Care: Following the expansion of Medicaid in Michigan, many UMSRFC patients are newly eligible for Medicaid insurance. Additionally, UMSRFC can connect patients with the UM charity care program (MSupport) which provides coverage for patients meeting specific qualifications. Finally, for patients who do not qualify for either program, certified application counselors are available onsite to help patients navigate the Insurance Marketplace.
e. Low Patient Volume: A patient volume of 15-20 patients per week allows members of the care management team to discuss each

patient at weekly meetings and manage any follow-up by telephone.

Results

During the first year of the CCM program from May 2016 to April 2017, there were 505 appointments at the UMSRFC, representing 208 unique patients. Between zero and three patients were identified as complex each week and were managed according to the described program. Approximately 30 patients were identified and followed within the first year. Three patients who were managed within the first year of this program were selected as examples. Details about each case are presented in Table 1.

Case 1

The patient is a 51-year-old man who presented after not having access to care for more than two years. He was discovered to have uncontrolled diabetes with markedly elevated blood sugars, quantified by a hemoglobin A1C (HgA1C) of 13.1% (normal values 4.2-5.6%), diabetic neuropathy, and cataracts. He required long-acting insulin but was unable to afford it and did not qualify for prescription assistance. An interim plan was devised in consultation with an endocrinologist to use short- and medium-acting insulin available over the counter until access to long-acting insulin could be established. The care manager contacted him weekly by phone to get reports on his blood sugar levels as he initiated insulin use. His blood sugars remained high and he was encouraged to establish care with the nurse practitioner continuity clinic. He has been followed consistently at the clinic and currently has improved blood sugars with a recent HgA1C of 8.1%.

Case 2

The patient is a 64-year-old woman who was seen with symptoms and laboratory results suggestive of a rare hematologic disorder. Diagnostic work-up required a soft tissue biopsy which was unavailable at clinic, but the patient was not eligible for Medicaid or MSupport. The care manager arranged for a surgeon to come to the UMSRFC to perform the biopsy and consulted with a hematologist to guide management in the interim. Meanwhile, the diagnosing physician advocated for urgent MSupport coverage and her application was approved. Care was transferred successfully to UM providers.

Case 3

The patient is a 35-year-old female who presented with a variety of health concerns. She was subsequently diagnosed with bipolar disorder, and lithium treatment was started. Her care manager reviewed her serum lithium levels in consultation with her prescribing psychiatrist. When her Papanicolaou screen and past colposcopy results demonstrated a high risk for cervical cancer, a gynecologist was consulted by her care manager, and her MSupport referral and application was expedited, but she was lost to follow-up.

Discussion

Features of Implementation at an SRFC

Goal of Transitioning Care

For many patients managed within the CCM process, the goal of the team was to transition care, either through specialty services or through the UMSRFC nursing continuity clinic. With the recent rise in the number of Americans who have access to insurance, free clinics are increasingly becoming resources for connecting currently uninsured patients to insurance options.[2] Even for patients ineligible for insurance, the UMSRFC can assist patients in applying for charity care support, which is available for patients up to 400% of the federal poverty line with a medical need for specialty services. Thus, a majority of complex patients at the UMSRFC can have their care transferred to more established health care systems. However, transfer of care may not be possible for patients not eligible for insurance, such as undocumented immigrants.[12]

Moderate Level of Patient Complexity

The patients at the UMSRFC in general have fewer features of complexity than other CCM programs report. In particular, complex patients at the UMSRFC typically have access to transportation, stable housing, and social support, and do not have concurrent substance use disorders. This may be explained by patient self-selection, as patients must research how to obtain free services and contact the clinic independently.

Table 1. Complex Care Cases

	Case 1	**Case 2**	**Case 3**
Age	51	64	35
Diagnosis	Uncontrolled type 2 diabetes mellitus, hypertension, hyperlipidemia, cataracts, obstructive sleep apnea	Suspected hematologic neoplastic disorder	Bipolar disorder, arthralgias, human papillomavirus
Features Complicating Care	Uninsurance, Medicaid ineligibility, poor medication adherence, unaffordable medications, multiple comorbid chronic health conditions, difficulty reaching patient by phone	Uninsurance, charity care ineligibility, complex diagnostic work-up	Uninsurance, psychiatric condition, financial documents inaccessible, difficulty reaching patient by phone
Medical Appointments	Scheduled: 12 Attended: 10 Cancelled/No Show: 2	Scheduled: 3 Attended: 3 Cancelled/No Show: 0	Scheduled: 7 Attended: 6 Cancelled/No Show: 1
Phone Follow-up Encounters	21	13	8
Consulting Services	Endocrinology	Hematology, General Surgery	Psychiatry, Gynecology
Length of Involvement in Complex Care Management	12 months	2 months	4 months
Social Services Provided	Medicaid application, charity care application, prescription assistance for insulin	Medicaid application, charity care application	Marketplace application (incomplete)
Outcomes	Diabetes managed by nurse practitioner continuity clinic	Care transferred	Lost to follow-up

Alternatively, those with more significant needs may have barriers to accessing the UMSRFC and either do not present to establish care or are lost to follow-up. This level of patient complexity may allow an informal care coordination program to be effective in an SRFC setting.

Ongoing Telephone Follow-up

Each of the three cases required significant follow up outside of normal clinic hours, including following blood glucose levels in case 1, coordination of specialty care services not typically available at the UMSRFC in case 2, and following lithium levels in case 3. Thus, the CCM model relies on having a leadership team with time and resources to manage patient communication outside of normal clinic hours.

Challenges of Implementation at an SRFC

Identification of Complex Patients

A key component of traditional CCM programs is patient selection, which includes physician referral, patient screening, or a selection algorithm based on patient characteristics. The program at the UMSRFC most closely resembled the referral model, as the leadership team collectively identified patients to be followed by the CCM program. Provider referral may not accurately identify all patients who would benefit from a higher level of resources due to personal biases, varying levels of program knowledge between providers, or availability bias, such that patients who present more often to care are more likely to be referred.[13] Though the team-based assessment utilized by the UMSRFC may feasibly remove some inter-provider variability, a CCM program would benefit

from more standardized assessment of patient complexity.

Lack of Medical Experience in Leadership Team Members

The identification of high-risk patients, management of logistical follow-up, and care coordination within the UMSRFC model depends on first year medical students, who due to their level of training have little personal clinical experience. Though licensed health care providers oversee the activities of the clinic, they may not be immediately accessible for non-urgent decisions involved in care coordination. A CCM program implemented at an SRFC may therefore benefit from involvement from upper-class clinical students in their third or fourth year.

Transitioning Leadership

Many SRFCs rely on volunteer medical students to provide administrative support, which leads to a leadership team that transitions yearly as medical students advance in their studies. Thus, there may be difficulty in ensuring administrative consistency for longitudinal programs like the described CCM protocol. At the UMSRFC, documentation of CCM patients and meetings has varied with each new leadership team, and thus ongoing program evaluation has been challenging. The implementation of the CCM program would benefit from formal and consistent protocols that are communicated deliberately during leadership transitions.

Additionally, due to the yearly transition of leadership, the implementation of a formal CCM program at an SRFC is constrained by the inability to employ a longitudinal complex care manager. Care managers, typically registered nurses or nurse practitioners, are a consistent component of successful care management programs in hospital and primary care settings and provide the dual role of coordinating care among team members and forming a trusted relationship with the patient.[6] Stroebel, et al. describe the use of registered nurses as care managers in the incorporation of the chronic care model in a free clinic; however, the free clinic described is not student-run and thus may not be subject to the same administrative and fiscal challenges.[14] By assigning a member of the student leadership team to be an informal care manager, the UMSRFC may be able to achieve more coordinated care but lacks the ability to create a trusted relationship that extends for longer than one year. Typically, the patients who were involved in complex care at the UMSRFC were involved only for a period of several months, thus a long-term care manager may be less crucial in this setting.

Persistent Barriers to Access

A significant challenge for the care management program is patients who are lost to follow-up despite frequent communication between the members of the care management team and regular patient outreach. Patients may become lost to follow-up for reasons including lack of access to transportation or consistent telephone numbers. The UMSRFC care management program would benefit from robust strategies for reducing patients lost to follow-up, such as defining a standardized policy for continued patient outreach, especially when previous communication has been unsuccessful, and allowing patients to define day or time preferences for communication.

Limitations

The generalizability of the program to other SRFCs is limited by the demographics of the population seen at the UMSRFC, which is predominantly Caucasian, rural, and with access to private means of transportation. Additionally, the UMSRFC is located in a Medicaid expansion state, which improves the ability to transition previously uninsured patients to more established health care systems. Thus, the model presented above may not be applicable to all SRFCs.

Conclusions

The UMSRFC has implemented an informal care management program, based on key features of formal CCM programs, that seeks to coordinate care for patients seen at the clinic with complex medical and social needs. Three cases presented in this paper have exemplified the primary goal of transitioning care, characteristics of complex patients, and the level of necessary follow-up. However, the implementation of a similar program requires overcoming challenges

inherent to the SRFC model.

In order to best serve their role as members of the health care safety net, SRFCs must identify strategies for managing the complexity that is present in the patient populations they serve. As illustrated in this paper, many of the tenants of CCM can be adapted to fit the constraints of an SRFC. The program at the UMSRFC may serve as a model for other SRFCs facing similar challenges.

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