BEST PRACTICES

Managing Patients with Multiple Chronic Conditions

THEDACARE PHYSICIANS CASE STUDY

Organization Profile

Located in northeastern Wisconsin, ThedaCare Physicians is part of a community health system that encompasses 4 hospitals, home health, senior services, behavioral health, and employee wellness. The group's 132 physicians and 69 midlevels provide primary care (family practice, internal medicine, and pediatrics) at 23 clinics. Approximately 420,000 office visits are conducted each year. ThedaCare implemented their electronic medical record (EMR) in 1999 and has a completely paperless system based on the EPIC EMR. The EMR includes a secure patient portal that allows patients to access their medical information, make appointments, refill prescriptions, and consult with their provider from their home computer.

Project Summary

Previously, ThedaCare focused on hypertension (HTN), diabetes, and cardiovascular conditions (CVC) as individual disease states. ThedaCare combined the care of these 3 chronic conditions into a "New Delivery Model" and implemented that model across all clinics in a phased approach.

Program Goals and Measures of Success

ThedaCare uses quality measures that are publicly reported as part of the Wisconsin Collaborative for Healthcare Quality (WCHQ). There are internal measures and goals for providers to actively perform both daily improvement work and sustained improvement. These internal guidelines and interventions have been developed based on national clinical standards, as outlined in Table 1.

Measures and data sources

HTN measure: The organization measures the percentage of uncomplicated essential HTN patients aged 18–85 years, who had a representative blood pressure (BP) controlled to less than 140/90 mm Hg during the 12-month measurement period.

Data Sources:

- EMR and its associated tables
- Disease management data warehouse
- HTN registry

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Diabetes measures: The organization measures the percentage of patients aged 18–85 years who had the following during the 12-month measurement period: the most recent A1C level controlled to less than 7%, most recent low-density lipoprotein (LDL) cholesterol controlled to less than 100 mg/dl, and most recent BP controlled to less than 130/80 mm Hg. The Diabetes Outcome Bundle includes all 3 goals.

Data Sources:

- EMR and its associated tables
- Disease management data warehouse
- Diabetes registry

CVC measure: The organization measures the percentage of patients aged 18–85 years with 1 of the following conditions: 1) 2 diagnosis-related visits for coronary artery disease (CAD) or a CAD risk-equivalent condition or 2) an acute coronary event consisting of an acute myocardial infarction (AMI), coronary artery bypass graft (CABG), or percutaneous coronary intervention (PCI) from a hospital visit. The patient also must have each of the following during the measurement year: at least one LDL cholesterol measurement during the year and the most recent LDL cholesterol measurement controlled to less than 100 mg/dl.

Data Sources:

- EMR and its associated tables
- Disease management data warehouse
- CVC registry

Over time, the number of patients diagnosed with HTN, diabetes, and/or CVC has steadily increased from approximately 3,000 patients with 1 or more chronic diseases in 2001 to more than 43,900 patients in 2010. This could be due to improved early diagnosis, improved data collection and organization, and to the aging of the population. See Table 2.

The measures in which ThedaCare reached the 90th percentile ranking are:

- Diabetes A1C test completed
- Diabetes LDL test completed
- Diabetes LDL <100 mg/dL
- Diabetes all-or-none testing
- Nephropathy screening
- Diabetes BP <130/80 mm Hg
- CAD LDL test completed
- CAD LDL <100 mg/dL
- Cervical cancer screening
- Uncomplicated HTN BP <140/90 mm Hg
- Tobacco screening
- Colorectal cancer screening

The tracking centers help facilitate focused team discussions and interventions related to improvement.

Table 1

	2009 Rate	2010 Rate	2010 Target	National Guideline
HTN (Uncomplicated) **BP < 140/90 mm Hg**	80%	80%	80%	JNC7
Diabetes Outcome Measure (Bundle) **(All 3 at clinical target):** **A1C < 7.0%** **LDL < 100 mg/dl** **BP < 130/80 mm Hg**	25.5%	30%	40%	ADA Clinical Guidelines
Diabetes **A1C < 7.0%**	60%	68%	68%	ADA Clinical Guidelines
Diabetes **LDL < 100 mg/dl**	68%	66%	68%	ADA Clinical Guidelines
Diabetes **BP <130/80 mm Hg**	55%	56%	64%	ADA Clinical Guidelines
CVC **LDL < 100 mg/dl**	75%	74%	80%	ATP III

ADA = American Diabetes Association; ATP = adenosine triphosphate; JNC = Joint National Committee.

Table 2

	2000		2009		2010	
	Percent in Control	Population Size	Percent in Control	Population Size	Percent in Control	Population Size
HTN BP < 140/90 mm Hg	62%	31,994[a]	78%	38,701	80%	40,488
Diabetes A1C	65% (A1C ≤ 8%)	1,517	61% (A1C ≤ 7%)	10,761	68% (A1C < 7.0% or < 8.0% for high-risk[b])	11,698
CVC	54 % (LDL ≤ 100)	1,576	75% (LDL < 100)	9,210	74% (LDL < 100)	9,644

[a]Population data first available in 2006
[b]Measure changed this year

To determine if the organization has met its objectives/targets, reports of the overall rates are reviewed monthly at both the clinic level and leadership level. There are reports that display the data at the site level and the provider level. Each provider is able to see all of the other providers' results in the organization. Each clinic site has a tracking center visible to all employees, providers, and, in some settings, patients and families, which displays the current results in aggregate for that site. The tracking centers help facilitate focused team discussions and interventions related to improvement.

There is also a Clinical Quality Oversight Committee, which consists of operational and quality leaders, including the chief medical officer and senior medical director. On a monthly basis, this committee reviews any measures not at target. If a measure is not at target for 3 consecutive months, then improvement work must be performed. The Oversight Committee then directs other committees and works with the Quality Council (physician leaders and practice administrators at each site) to develop interventions. Ultimately, the results are communicated to the board of directors.

Population Identification

ThedaCare's target population includes all active patients aged 18–85 years with the diagnosis of HTN, CVC, and/or diabetes. An "active" patient has had 2 office visits in the past 24 months, with 1 of those visits in the past 12 months. Patients are also identified at the point of care via the EMR, which is set up to easily identify these chronic diseases via the problem list and health maintenance (HM) alerts (described below).

Demographics

ThedaCare has a total of 43,902 patients with HTN, diabetes, CVC, or a combination of these. Gender is 50% male and 50% female. Other demographics are shown in Table 3

Table 3

	Average Disease Value	Average Age	Average BMI	Tobacco Users
HTN, Diabetes, CVC		61 years	31.3 (obese)	14%
HTN	BP: 126/74 mm Hg	59 years	31.4	13.9%
Diabetes	A1C: 7.1%	48 years	31.9	13.0%
CVC	LDL: 87 mg/dl	57 years	27.8	13.4%

BMI = body mass index.

Chronic Disease Registry

ThedaCare uses its own data warehouse and a chronic disease registry (combining the 3 disease-specific registries for CVC, HTN, and diabetes) to identify patients and track BP, lab values, and office visits. Initially, the registries were separate. The end user would run a report for patients with an individual disease state. Now, they are combined in 1 chronic disease registry. The chronic disease registry was developed to electronically extract data from the EMR based on diagnosis codes. The registry is populated daily and is maintained by 3 analysts who also have other responsibilities. The use of a data warehouse and chronic disease registry allows the organization's providers and staff to monitor chronic disease patients and rates on a daily basis.

The Intervention

The EMR is essential to the management of patients with chronic diseases. ThedaCare asks providers to list individual patient goals along with the diagnosis on the problem list; for example, HTN goal BP <130/80 mm Hg. The EMR has HM alerts that remind staff and providers of services for which the patient is due. It is expected that all staff members, including frontdesk staff, will review needed HM services. For diabetes, when the diagnosis is entered on the problem list, the alerts for all the components of diabetes care automatically turn on. HTN and CVC need to be manually turned on, based on individual care plans.

There are clinic staff dedicated to performing what is called "chart scrubbing" prior to a patient's visit. Daily, this staff person looks at every patient in the next day's schedule and checks HM alert(s) to be sure nothing is missed at the appointment. Based on a list of requirements for each disease, needed labs are ordered and made ready for provider approval. At the point of care, the medical assistant will draw the labs before the provider sees the patient. The goal is to have the results back by the end of the visit, so that the provider and patient can review them and make any necessary disease management changes. Additionally, every patient is given a written plan of care ("After Visit Summary") upon leaving the office.

The EMR also houses patient information across various services. If a patient is hospitalized, all of the labs, vitals, and provider notes can be seen by the primary care provider and staff. This helps avoid duplication of services and increases collaboration between entities. The staff member performing the chart scrub would see, for example, that a patient just had an LDL test done in the hospital so would not repeat it in the office. This saves the patient money as well as avoids unnecessary needle sticks. Specialists' visit notes also are part of the EMR, whether by transcription or scanned in to the EMR if the provider is not locally based. Home care visit notes also are visible.

A committee of providers and ancillary staff regularly reviews the list of HM requirements to be sure they are consistent with current national guidelines.

Diabetes intervention

One intervention available to providers is to refer patients to a dietitian and/or diabetes educator. The program is certified by the American Diabetes Association and has demonstrated effectiveness as a component of patients' self-management of their chronic disease. The percentage of patients at goal for A1C <7% after completing the diabetes program was 51% at year-end 2010. This is an underutilized service and the challenges are to encourage providers to consistently refer to the program and for the diabetes education program to handle the increased volume if all providers referred.

Hypertension intervention

Another self-management initiative addresses HTN. ThedaCare targeted a group of patients aged 60 years and older with a current systolic BP between 140 and 149 mm Hg. It was felt this population would be engaged and only needed a small improvement to be at goal. This group received a DVD focused on self-management skills as well as access to online tools for diet and exercise. The patients received an incentive of a free home BP monitor upon completion of the program. At the beginning of the program in January 2009, 0% of the patients had BP at goal. In January 2010, at the completion of the program, 70% were at goal.

Cardiovascular conditions intervention

Pharmacists discuss medication management with patients and are involved in lipid-lowering medication treatment planning as well.

Pharmacist support

A pharmacist from the community visits provider group meetings to discuss medication management topics for chronic disease treatment.

Worksheets and reports

Many patients have more than 1 chronic disease, and it was cumbersome to manage multiple worksheets. In 2010, the organization developed chronic disease worksheets, combining all 3 chronic diseases onto 1 sheet. Now, the staff can see any pertinent information for the individual patient on 1 worksheet. The worksheets include the patients' demographics, new diagnosis designation, recent office visit date, date of scheduled future office visit, most recent 2 BPs and dates, lab results (A1C, LDL, nephropathy screen), and eye exams. The worksheets also may be sorted alphabetically, by location or provider, by BP or lab level (to target the highest values first if desired), and by last office visit and next scheduled lab or office visit. This allows the staff to tailor the worksheets to their specific needs. The worksheets are updated daily, based on EMR data.

In addition, there are reports available that show each clinic's and provider's individual rates. This is unblinded data that is shared with providers and staff, across the organization at managers' meetings and by senior leadership. These reports have the capability to allow the provider to drill down to see individual patients who are not at goal. Medical assistants and nurses then contact patients who are in need of chronic disease care. The unblinded data sharing was the first step in changing physician practice.

Another tool available for clinics is StatitpiMD (Statit) reports. These reports have color-coded red, yellow, and green results based on how close the rate of patient compliance with a given measure is to goal (eg, percentage of HTN patients with BP <140/90 mm Hg). Clinics post these reports on their quality tracking centers for all to view.

Workflow and process changes

ThedaCare's new delivery model represents a major change in clinic process. It is being implemented clinic by clinic because it is completely different from how the clinics operated in the past. Previously, patients had to come into the clinic within 2 weeks of the date of an office visit to have labs done. Today, patients register 15 minutes in advance of the office appointment and have the labs done before seeing their provider. Labs are drawn in the exam room by the medical assistant.

Under the new delivery model, medical assistants are asked to perform more tasks than previously required. New positions also were created to help with administrative tasks. Additionally, dates of office visits are included in the patient lists, and this assists the staff with determining when a patient is due for services.

Leadership Involvement and Support

The CEO incorporates quality measures into his performance plan annually and the WCHQ measures are included. The organization's former CEO was 1 of the founding members of the WCHQ. The Quality Committee of the board of directors considers chronic disease management 1 of its top 5 priorities, and reviews the rates on a monthly basis. Chronic disease management data are also shared at quarterly system-wide managers' meetings to help raise awareness of the importance of the management of chronic diseases.

The senior executive team supports chronic disease management and approves the expenditure of dollars to maintain and expand registry capabilities and functionality. The health information medical director is instrumental in supporting project needs for the EMR.

A corporate quality team supports disease management and performance improvement efforts across the system. This staff has an annual budget of over $1.5 million. Quality coordinators support the clinic-based staff in achieving their quality objectives.

Provider involvement

Providers have their own rewarding system for meeting quality targets and improving quality outcomes.

The top 5 priorities are chosen by senior leadership and the board for the compensation program. If the organization did not meet the previous year's target for a priority, it typically remains on the top 5. Also, if there is a measure on which the organization is performing poorly, that measure moves into the top 5 to establish awareness and target improvement.

ThedaCare previously based targets on the performance of the top third of providers as well as statistical significance. The organization has moved to a focus on reduction of defects. Most measures warrant a 20% reduction of defects, unless performance is high, which then moves the measure to a monitoring status. Monitoring status requires maintenance of that high level.

Challenges

- Lack of provider knowledge of evidence-based guidelines
- Limited provider time available for educational presentations on guidelines and standards (lunch hours, etc)
- Difficulty communicating and spreading the message to large group of providers (>200) located throughout northeast Wisconsin (some rural, etc)
- Limited office visit time to address all chronic diseases and preventive services
- Provider complacency; ie, believing current rate of control is adequate
- No financial incentive to all staff, only providers
- Difficulty measuring medication use and compliance with current use of EMR; no pharmacy claims available to track refill data
- Patient reluctance to incur more out-of-pocket cost when additional medications were indicated
- Patients' lack of motivation to participate in self-management of chronic disease

Advice for others

- Senior leadership and provider support is the basis of a strong disease management program
- Transparency of data from the start of the program is essential
- Chronic disease management is a team effort
- Improvement work should be done at the site level, not the corporate level
- All interventions must be communicated to staff and providers before implementing changes (you never can communicate enough!)

Lessons Learned

Success factors

- Leadership commitment and support to drive improvement in chronic disease care since 1998
- Providers who are engaged and leaders in the improvement effort
- Financial incentives to improve quality performance
- Organized committee structure to share results and establish accountability for improvement work
- Use of lean principles and tools
- Transparency of data to elicit competition among providers
- Staff and patients teaming together to improve health outcomes
- Consistent and frequent education to providers, clinic staff, and patients
- EMR used to facilitate chronic disease care across the continuum
- Standardized clinic work and processes
- Chronic disease management registry and worksheets to identify patients who are not at target

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