

HEALTH MANAGEMENT AND REVENUE GENERATION IN THE GAPS OF CARE

DR. MAGDY NASRA'S MEDICAL PRACTICE & MYNDYOU INC.

A COLLABORATION TO ADVANCE THE BENEFITS OF THE
CHRONIC CARE MANAGEMENT PROGRAM (CCM) THROUGH
THE USE OF COGNITIVE DRIVEN TECHNOLOGY



Abstract

With changing trends of aging in place, increasing services are shifting into people's homes and communities in an effort to prolong independence, improve health outcomes, and lower expensive healthcare costs, such as those associated with hospitalizations and readmissions. One such service that was created with these goals in mind is Chronic Care Management (CCM). This program intends to help clients with two or more chronic conditions better manage and control their health in the community through remote engagement and attention from their physician practice on a monthly basis. Along with its many benefits, CCM faces a number of challenges, among them insufficient time for staff members to address the full population of eligible clients and limited tools to effectively triage and align focus with clients who are especially high risk.



To answer these challenges in remote chronic care, MyndYou was able to successfully integrate its AI-driven tool that remotely monitors changes in Cognitive Complexity in order to inform providers regarding elevated risk, prompting targeted interventions to prevent deterioration within the gaps of care. This paper outlines one case study collaboration that uses MyndYou solution within Dr. Magdy Nasra's CCM program to improve outcomes in a revenue-producing yet cost-effective way, benefitting both the provider and client. Over the course of eight months, the MyndYou solution was integrated within Dr. Magdy Nasra's CCM service as a collaborative program to optimize client triaging and tailored interventions for high-risk clients. The program consisted of CCM phone calls conducted through the MyndYou web platform, which applies its unique Cognitive Complexity algorithm to the voice data of free-flowing conversation between the care manager and client to detect an elevated risk of deterioration associated with chronic conditions. Following the eight-month program, both the qualitative and quantitative results strongly support that implementing the MyndYou Solution in the CCM monitoring service improved both office revenue and patient care through revenue-generating calls-to-action—such as appointments in the office and complex care CCM billing status—and informative, personalized insights delivered to practitioners regarding their clients' statuses.

"We are now more complete. We can get patients back to the office faster. Without the MyndYou platform, it is a slower process to know if they are compliant at home. Now we have connected the home setting with the office & are able to monitor if they are compliant much better."

Dr. Magdy Nasra

Introduction

There have been many changes to the health care system in recent years in an effort to provide services that meet the needs of the client as well as to ensure that costs align with positive health outcomes. There has also been a shift to keep and treat the client in the community and reduce the need for hospitalization or institutionalization (Zuckerman et al, 2016). In fact, the older adult population more frequently chooses to "age in place" and remain in the community as they age and . (Center for Disease Control and Prevention, 2009). With the advancement of technology and its use in the healthcare field, there are many opportunities to predict, prevent and promote health in a person's home environment (Gandarillas and Goswami, 2018).

To address these trends and changes, the government has implemented several programs to help achieve these goals. One such program is the Chronic Care Management (CCM) program which is intended to help the client with two or more chronic conditions better manage and control their health in the community. Reimbursement for the CCM service is through The Centers for Medicare & Medicaid Services (CMS) which pays a monthly fee for a minimum of 20 minutes spent helping the client or a higher rate for time spent over 60 minutes. (Medicare Learning Network, 2019).

Although the CCM program is a very helpful service, there are still a number of obstacles that limit the care managers from being able to fully detect issues or concerns including time constraints and limited tools to triage patients. This highlights the need for a monitoring system like MyndYou that uses technology to fill these gaps.

The Benefits of Using MyndYou with CCM:

The use of remote monitoring solutions for chronic conditions has been shown to have positive impacts on the health of the participants, including improving general awareness of their health and better management of their conditions. (Inglis et al, 2017).

The MyndYou triaging solution helps to streamline the CCM service by providing a non-intrusive solution that objectively informs physician practices with cognitive-driven insights into client risk. It helps the care coordinator and other healthcare professionals focus their attention on at-risk clients who need interventions, even before significant symptoms arise. For example, the MyndYou platform has been able to detect changes related to infection or significant emotional issues before anything was reported by the client or detected by the care coordinator. The early detection of health issues not only enables positive outcomes and helps reduce long term costs, but it can also help generate revenue for the medical office as a result of the data-driven information provided by the MyndYou platform.

"In the office, patients get distracted and talk about other things. The anomaly reports take me into their home setting and gives me a glimpse of what they may otherwise forget to tell me. It also lets me know if they need a sooner appointment."

Dr. Magdy Nasra



Case study: MyndYou and Dr. Magdy Nasra's Medical Practice

MyndYou, in collaboration with the medical office of Dr. Magdy Nasra is an example of how beneficial the data-driven information from the MyndYou platform is a tool to help monitor function and detect changes in the CCM client population of the medical practice.

Over the course of eight months, a cohort of 88 clients was followed by a CCM care coordinator who used the platform feature of the MyndYou solution with passive voice analysis. The services included weekly phone calls with the client through the platform as well as coordination with the medical office on an as-needed basis.

The data collected from the first few weekly calls on the MyndYou platform was used to establish a baseline for each of the clients. Subsequent calls were compared to the baseline for each individual client in order to detect and alert for any changes. Any time that a significant change was picked up by the platform, a report was sent to the medical office. This report made the office aware that a change (also referred to as an anomaly) had been detected, gave insight into potential reasons, and included practical suggestions to help improve the health and function of the client. The office would then react to the report as they saw appropriate, which included scheduling an office visit to address the issues, making referrals to other health care professionals (OT/PT) or updating and adjusting medications.

Many of the actions that the medical office took in response to the anomalies, such as targeted office visits or cases of complex CCM, led to increased revenue for the medical practice. In addition, the updates to the office provided the health care practitioner with valuable information on current issues so that appointments could be spent more focused on the concerns. This process was also beneficial to the clients as it helped improve their health management and ensure they received focused and personalized care adjusted to their dynamic needs.

Participant Demographics

- Participants: 88
- Ages: 36-95 (mean age=73)
- Females: 52 Males: 36
- Retention rate: 81.8% (72/88) after 8 months



Data Outcomes

Quantitative Outcomes

During the eight months, 32 clients had at least one anomaly. In addition, 20 out of the 32 clients with anomalies were billed for CCM complex care, some for multiple months. That is a total of 62.5% of clients with anomalies who were also billed as CCM complex care (Chart 1).

The anomalies were also helpful in triggering issue-specific office visits. When analyzing the data, it was found that 64 out of the total 99 anomalies resulted in 43 separate office visits. That is 64.6% of all anomalies that resulted in a targeted office visit (Chart 2). When combining both the anomalies that triggered CCM complex care billing with anomalies that triggered office visits, a total of 63.2% anomalies were responsible for revenue-benefitting actions (Chart 3).

Chart 1 Anomalies Billed for CCM Complex Care

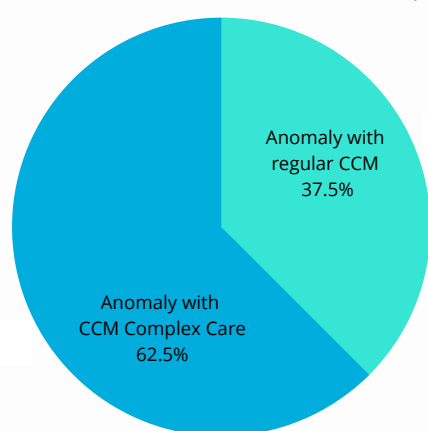


Chart 2 Anomalies that Triggered Office Visits

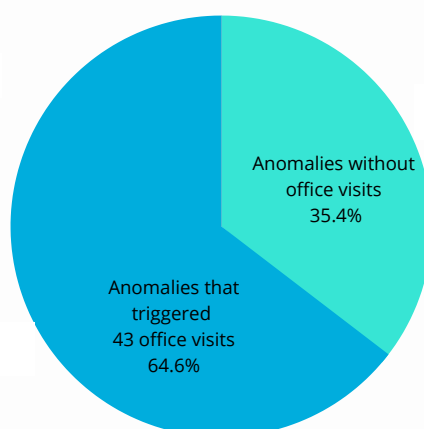
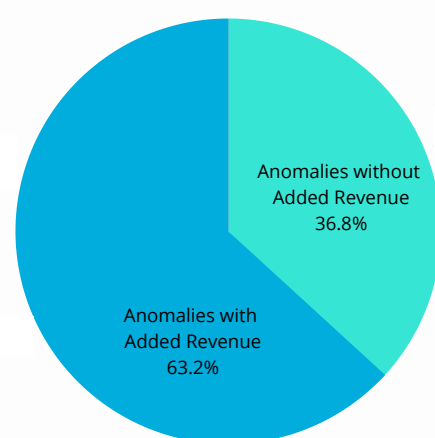


Chart 3 Anomalies with Added Revenue Benefits



There were 67 incidences where an anomaly resulted in the medical staff initiating actions meant to benefit the clients in improving their health and well-being, thereby potentially impacting clinical outcomes. A total of 70.7% of anomalies triggered responses (Chart 4). These actions were divided into five categories: "medications", "education", "referral to HCP (health care professional)", "tests" and "other". The results show that there were 23 medication actions which included changing or adding medications. There were 19 incidences of education in which the health care provider discussed the client's conditions and how to improve their health. The 11 referrals included OT/PT and other medical specialists. There were 10 actions that had the clients do further testing, including blood work or x-rays and 4 other actions (Chart 5).

Chart 4 Anomalies that Triggered Medical Staff Action

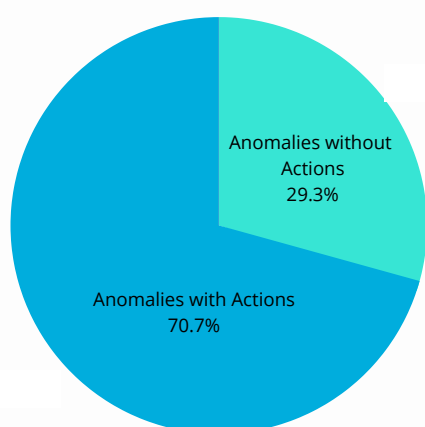
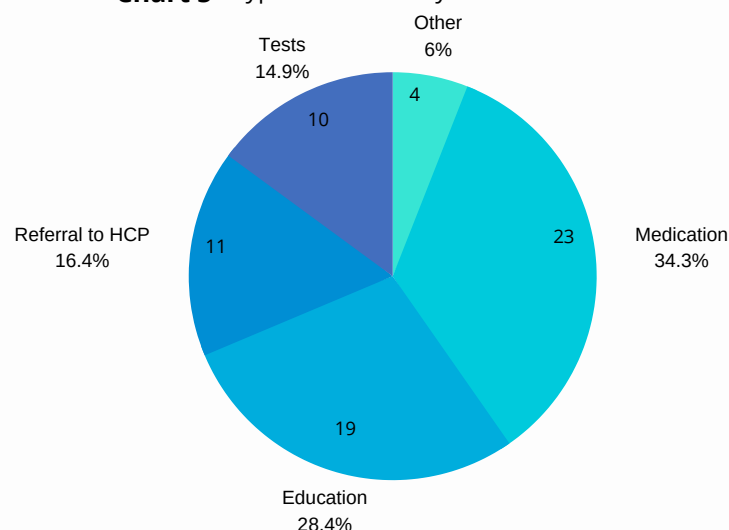


Chart 5 Types of Actions by Medical Staff



Data Outcomes

Qualitative Outcomes

Dr Nasra and three of his office and medical staff were surveyed using a structured survey questionnaire in an interview format. The qualitative results showed that the entire staff felt there were many benefits when using MyndYou for their CCM service, both for the office and the clients. They also found that the anomaly updates helped raise red flags about people who might not have received the support until later on in their health issues (Table 1).

Table 1 Survey results from Dr. Nasra and medical staff

	Lead Medical Receptionist	Administrator	PA-C	MD
How helpful were the updates/anomaly reports in guiding your actions? (1-3)	3	N/A	3	3
Do you feel you made more actions because of our updates/anomalies?	yes	yes	yes	yes
Do you feel the updates/anomalies helped raise red flags of people who might not have received the support until later on in their issues?	yes	yes	yes	yes
Did having the information help you when meeting with your patients on office visits? Did it save you time? Help you organize your plan of action?	no	yes	no	yes
Did you notice a difference in your effectiveness in treating those under MyndYou and those without?	yes	yes	no	yes

There were many comments made during the interviews that lend to the validation that the anomalies helped trigger office visits, thereby increasing revenue. There were also several statements made that supported the fact that the anomalies led to positive actions taken for better healthcare, which in turn leads to favorable clinical outcomes.

"I think it was very helpful, because we were able to get the client to an appointment sooner, which kept the client from having to go to the hospital."

Lead Medical Receptionist

"MyndYou is beneficial. The follow-up has improved and there are more appointments made with the client"

Physician Assistant - C

Data Outcomes

Qualitative Outcomes Continued

The survey interview with Dr. Nasra offered many positive remarks about the success of the collaboration and provides strong support to the quantitative data. Dr. Nasra felt that the MyndYou platform and the detection of anomalies helped speed up the process of identifying issues in order to get clients seen sooner as well efficiently monitoring clients' health compliance. Dr Nasra also agreed that the anomalies lead him to take more actions including medication adjustment, office visits and additional testing. He also felt that the MyndYou platform and the flagging of issues brought up things that might not have otherwise been addressed.

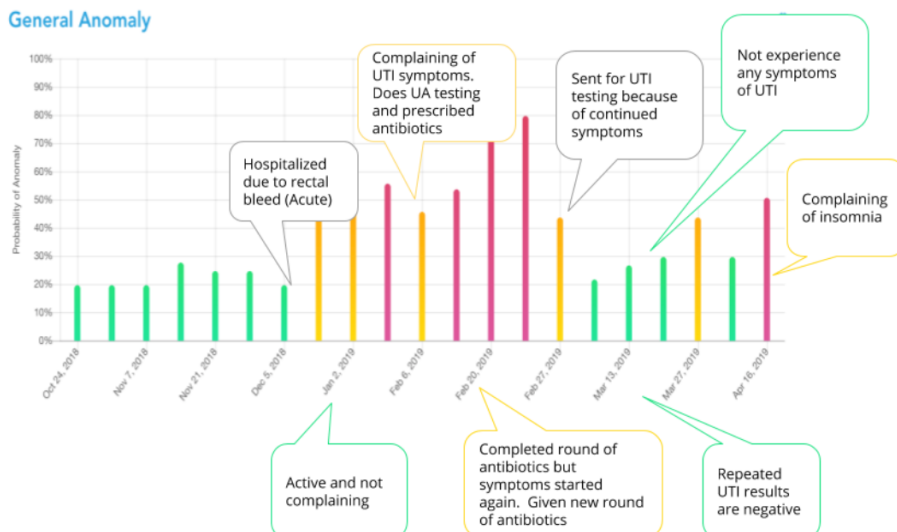
"Did I order more meds, refill more meds, order more testing, and do more examinations? Yes, absolutely."
Dr. Magdy Nasra

Health-Related Anomaly Detection: A Case Study:

J.T. is one of the many examples that demonstrates how the MyndYou technology helped detect health issues that were impacting Cognitive Complexity and function. Over the course of several months, the platform was able to pick up on changes prior to the client's complaints. Upon anomaly detection, a report was sent to the medical office with clinical suggestions and insights. Shortly after, the client began experiencing UTI symptoms and was treated with a round of antibiotics. However, the platform continued to detect anomalies despite antibiotics that should have treated the infection. An additional anomaly report was sent to the office and further testing revealed that the client needed to be treated with a second course of antibiotics. Finally, after the second course of antibiotics, the green analytics line appeared, indicating that there were no issues. Further negative lab tests supported these findings.

Figure 1 Anomaly graph for patient J.T.

General Anomaly



"The care is more focused and more direct. The MyndYou anomaly already indicates the issue that allows for more direct care." Dr. Magdy Nasra

Conclusion

The eight month collaboration between MyndYou and Dr. Magdy Nasra's CCM service was an overall success. The data-driven insights were successful in both triggering issue-focused office visits and CCM complex care cases as well as improving the health management of the clients who participated. The feedback from the office and medical staff was favorable and their answers indicated that they recognized the many benefits of using the MyndYou platform to pick up on changes in the health and wellbeing of their clients. It can be concluded that incorporating the MyndYou platform into a medical practice in order to detect issues as they are just developing, benefits the office in both revenue and cost reduction as well as benefitting client outcomes.

Vision For The Future

The CCM service provided by the collaboration of MyndYou and Dr. Nasra's office offered client monitoring using only the voice-based web platform feature of the MyndYou solution. However, the full MyndYou solution is made up of three features that complement one another to allow for the comprehensive monitoring of clients. These features include the web platform that is used by care practitioners to conduct remote care calls, which was used in this collaboration. During calls, voice analytics help clinicians detect subtle changes that could indicate a cognitive decline that is affecting their clients' physical and mental health. The app feature, which is downloaded by the user, passively collects multiparametric activity data from the clients' daily living, including their walk, drive, sleep and voice patterns, to gather information between platform calls. The bot feature allows for targeted calls with individualized, pre-defined questions which generate a quick health check-in with the client. These three components that make up the MyndYou solution help improve client engagement and their active participation in their health management as well as provide an objective way for data collection.

Using signal processing, machine learning, and AI, the MyndYou solution integrates this behavioral and cognitive daily-living data together with existing care protocols to provide objective and personalized care recommendations to practitioners. Implementing the full MyndYou solution to monitor participants of a CCM program will further enhance the provider's ability to deliver comprehensive care to the clients on an ongoing basis as well as maximize office revenue and client outcomes.



Revolutionizing Cognitive Driven Care

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