

**ORIGINAL RESEARCH**

TEAM approach reduced wait time, improved “face” time

An experimental care delivery model shows how staffing and role adjustments can enrich the health care experience for patients, staff, and physicians.

ABSTRACT

► **Purpose** In 2013-14, 2 clinics in the Watertown Regional Medical Center (WRMC; in southern Wisconsin) launched a new delivery model, “TEAM (Together Each person Achieves More) Primary Care,” as part of a quality improvement project to enhance the delivery experience for the patient, physician, and medical assistant (MA). New work flows, roles, and responsibilities were designed to reduce cycle time, increase patient time with physicians and staff, and reduce patient wait times.

► **Methods** The new model increased the ratio of MAs to physicians from a baseline MA:MD ratio of 1:1 to 3:2, and trained MAs to assume expanded roles during exam-room entry and discharge, including assisting with documentation during the patient visit. A process engineer timed patient visits. The process engineer and a human resources associate conducted surveys to assess the level of satisfaction for patients, physicians, and MAs.

► **Results** Cycle time decreased by a mean of 6 minutes, from 44 to 38 minutes per patient; time with staff increased a mean of 2 minutes, from 24 to 26 minutes per patient; and waiting time decreased from 9 to 2 minutes per patient. Qualitative interviews with patients, physicians, and MAs identified a high level of satisfaction with the new model.

► **Conclusion** The higher staffing ratios and expanded roles for MAs in the new model improved workflow, increased the face time

between patients and their physician and MA, and decreased patient wait times. The TEAM model also appeared to improve patient, physician, and MA satisfaction. We faced many challenges while implementing the new model, which could be further evaluated during wide adoption.

In recent years, we observed that our physicians, nurses, and medical assistants (MAs) appeared to be spending more time on administrative and clerical tasks—including tasks in the exam room with the patient—and less time engaged in direct patient care.^{1,2} We recognized these factors contribute to burnout and threaten staff retention and anticipated that a new model would improve physician time spent in direct patient care, decrease the demands of administrative tasks, and increase patient, physician, and MA satisfaction.³⁻⁶ Burnout, known to affect more than half of US physicians, has a negative impact on quality of care and patient safety and satisfaction.⁷⁻¹¹ Improving workflow has been shown to reduce burnout.¹²

Watertown Regional Medical Center (WRMC) is a small, financially stable integrated delivery system in rural southern Wisconsin, composed of a 90-bed hospital, 10 primary care clinics (7 owned and 3 affiliated), and 24 employed physicians in 9 specialties. Two clinics within WRMC launched a new delivery model, “TEAM (Together Each

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person Achieves More) Primary Care,” to improve the delivery experience for the entire team, defined as the patient, physician, and MA. New workflows, roles, and responsibilities were designed to reduce cycle time (the total amount of time patients spent in the clinic from check-in to check-out), increase the total time a patient spent with staff (physician and MA or in point-of-care testing and radiology), and reduce the total time a patient spent waiting.¹³

We describe here WRMC’s experience in developing and implementing workflow improvements as a means of reducing burnout and improving satisfaction.

METHODS

We selected 2 WRMC sites for TEAM re-engineering based on their experience with quality-improvement projects and perceived likelihood of success with a new transformation initiative. In early 2013, WRMC charged one physician (JM), 2 MAs, the clinic scheduler, and the clinic administrator with designing the details of the model including evaluation metrics. WRMC provided a .5 FTE process engineer (MS) to assist with the design and implementation of the model at no extra expense to the clinics. The model was implemented in late 2013 and into 2014 after regular TEAM planning meetings and observational visits to non-WRMC sites identified as examples of best practices in improving outpatient primary care patient satisfaction: Bellin Health (Green Bay, Wis); ThedaCare (Appleton, Wis); the University of Utah (Salt Lake City); and the University of Wisconsin Health Yahara Clinic (Madison, Wis).

TEAM model

The TEAM model—so named to create top-of-mind awareness of its benefits—increased the MA:MD ratio, maintained consistent team composition so that physician/MA teams learned to work together and become more efficient, and added new MA responsibilities. We trained MAs to assist with documentation in the exam room to ensure that physician time was spent in face-to-face direct patient care.¹⁴⁻²⁰ In these ways, we sought not only to increase patient satis-

faction but also to enhance our own “joy in practice,” defined primarily by a high level of work-life satisfaction, a low level of burnout, and a feeling that the medical practice is fulfilling.²¹

In our traditional model, an MA retrieved the patient from the waiting room, conducted initial assessment in the exam room, and then left the patient to wait for the physician to enter. Once the physician entered and conducted the exam, the patient would be left alone again to wait for the MA to return. In our revised model (TABLE 1), we assigned one MA to each patient from arrival to discharge. After greeting the patient in the waiting room, the MA conducted an initial patient interview in the exam room, then remained in the room with the physician to document the visit. After the physician exited the exam room, the MA completed follow-up orders and provided the patient with a visit summary.

To facilitate consistency throughout the day, we designed a workflow similar to those created in lean models originally designed to increase efficiency in the manufacturing industry (TABLE 2). Visual and electronic cues triggered each step of the process and coordinated the movement of MAs and MDs. Cues included the conventional flag system outside each exam room, an electronic messaging system within the electronic health record (EHR) to indicate when a patient was ready to be seen, and a whiteboard in an area visible to all team members on which we wrote lab and radiology requests.

We experimented with the MA:MD ratio to identify the most effective and efficient team composition. On alternating weeks, we assigned one MA to one MD, 2 MAs to one MD, or 3 MAs to 2 MDs. Additionally, with the 2:1 MA:MD ratio, we varied the visit length in 2 tests; one spanning 30 minutes and the other 20 minutes. The MDs and MAs were seated at side-by-side workstations to make communication easier. We developed protocols and checklists that allowed MAs to enter health maintenance orders and conduct point-of-care testing before the physician entered the room. Such details included immunization management, strep screens, urine analyses, diabetic foot exams, extremity x-ray films, and mammogram and colonoscopy referrals.

TABLE 1

Key elements of the TEAM patient care model

An increase in the MA:MD ratio	2:1 or 3:2
An increase in MA responsibilities	Closing care gaps Ordering lab work by protocol Assisting with visit note documentation Pending orders Pending billing and coding inputs
Co-visit format	The MA stays in the room during the MD portion of the visit, assisting with data retrieval and data entry. The MA then remains in the room after the physician component to operationalize next steps and to provide patient education and patient self-management support.
Improved communication	All members of the team hear the same discussion, which results in better understanding by all members of the team.

MA, medical assistant.

To prepare MAs, we obtained special permission for team documentation from our Chief Information Officer and developed associated policies and procedures. A physician assistant (PA) trained each MA, introducing the structure and content of subjective, objective, assessment, and plan (SOAP) notes. Training was continuous, as PAs provided feedback when MAs began team documentation. The MAs documented visits using templates, free form, and quick text. We measured visit cycle-time, face time with staff, and patient waiting times. A process engineer with a stopwatch observed and timed the flow (but did not enter the exam room). We also conducted patient interviews immediately post-visit and administered anonymous questionnaires to clinic staff at different phases of the model. Physicians and MAs met weekly to evaluate the design.

We used qualitative interviews of patients, physicians, and MAs to identify the level of satisfaction with the new model. During the first week of implementation, a nurse and our process engineer conducted brief in-person surveys with approximately 20 post-visit patients. Patients, chosen by convenience, were asked if the visit addressed their concerns, whether they left with a thorough understanding of next steps, and if their wait time was acceptable. Twice during the implementation phase, a human resources associate distributed 9-item an-

ymous questionnaires to staff members during scheduled department meetings.

RESULTS

Times per activity with different MA:MD ratios and visit lengths are shown in TABLE 3. After 6 months, cycle time decreased by a mean of 6 minutes, from 44 to 38 minutes per patient; time with staff increased by a mean of 2 minutes, from 24 to 26 minutes per patient; and wait time decreased by a mean of 7 minutes, from 9 to 2 minutes per patient. We concluded the MA:MD ratio of 3:2 was most efficient because the 2:1 model left MAs with excess non-patient time.

Our delivery model received consistently positive comments from patients. Many expressed gratitude for the extra set of ears and eyes guiding them through the process. One recalled the “old days” when a nurse joined the doctor in the exam room. Another appreciated that both the MA and physician could answer follow-up questions over the phone.

Employee satisfaction

Surveys to assess satisfaction were distributed to all employees whether they were involved in the new model or not. Sixteen employees responded to the pre-implementation questionnaire and 18 responded to the post-implementation one distributed 7 months later. The questionnaires showed an increase in employee satisfaction scores from 3.70 to

TABLE 2

TEAM member activities before, during, and after patient visits

The timeline below shows how TEAM members' responsibilities are coordinated to expedite the flow of office examinations for consecutive patients. Although we eventually determined that a staffing ratio of 3MAs:2MDs was optimal, the 2:1 ratio depicted here makes the basic concept easier to understand.



	Physician	MA 1	MA 2
Elapsed time ↓	MD out of exam room <ul style="list-style-type: none"> • Complete previous patient note • Review next patient • Review paper inbox • Review EMR inbox 	MA with Patient 1 <ul style="list-style-type: none"> • Greet and see patient to room • Collect chief complaint, nurse intake information, vital signs • Perform order protocol for point-of-care testing • Notify physician • Log in as scribe* 	
↓	MD with Patient 1 <ul style="list-style-type: none"> • Verbal handoff from MA • History of present illness • Reconcile chronic problems in problem list • Examine patient • Communicate diagnosis • Communicate treatment plan • Prescribe/refill medication • Address quality metrics (BMI, smoking, advanced care planning) • Order health maintenance testing • Review and update current visit problems • Complete future visit and lab order sheet • Exit room 	MA with Patient 1 (as scribe) <ul style="list-style-type: none"> • Verbal handoff to provider • Record history of present illness • Record exam results • Record instructions to complete assessment and plan • Document each problem • Differential diagnosis (thought process and reason for diagnosis) • Treatment plan (not represented by orders) • Expected course • Follow-up 	MA 2 out of exam room <ul style="list-style-type: none"> • Address EMR inbox • Prep next patient
↓	MD out of exam room <ul style="list-style-type: none"> • Complete previous patient note • Review next patient • Review paper inbox • Review EMR inbox 	MA 1 with Patient 1 <ul style="list-style-type: none"> • Print visit summary • Exit room 	MA 2 with Patient 2 <ul style="list-style-type: none"> • Greet and see patient to room • Collect chief complaint, nurse intake information, vital signs • Perform order protocol for point-of-care testing • Notify physician • Log in as scribe

3.89 on a 5-point Likert scale, with 5 ranking highest. "I am learning from [Dr. Milford] and understanding things more fully," wrote one respondent. Another said, "Dr. Milford and his clinical support staff are less stressed."

Individual observations such as, "I can leave sooner with less work left to do," and "All documentation is done before [the] patient leaves," reflect the reduction in time that patient records remained open or incomplete.

TABLE 2

TEAM member activities before, during, and after patient visits (*continued*)

	Physician	MA 1	MA 2
Elapsed time 	MD with Patient 2 <ul style="list-style-type: none"> • Verbal handoff from MA • History of present illness • Reconcile chronic problems in problem list • Examine patient • Communicate diagnosis • Communicate treatment plan • Prescribe/refill medication • Address quality metrics (BMI, smoking, advanced care planning) • Order health maintenance testing • Review and update current visit problems • Complete future visit and lab order sheet • Exit room 	MA 1 out of exam room <ul style="list-style-type: none"> • Address EMR inbox • Prep next patient 	MA 2 with Patient 2 (as scribe) <ul style="list-style-type: none"> • Verbal handoff to provider • Record history of present illness • Record exam • Record instructions to complete assessment and plan • Document each problem • Differential diagnosis (thought process and reason for diagnosis) • Treatment plan (not represented by orders) • Expected course • Follow-up
	MD out of exam room <ul style="list-style-type: none"> • Complete previous patient note • Review next patient • Review paper inbox • Review EMR inbox 	MA 1 with Patient 3 <ul style="list-style-type: none"> • Greet and see patient to room • Collect chief complaint, nurse intake information, vital signs • Perform order protocol for point-of-care testing • Notify physician • Log in as scribe* 	MA 2 with Patient 2 <ul style="list-style-type: none"> • Print visit summary • Exit room

BMI, body mass index; EMR, electronic medical record; MA, medical assistant; TEAM, Together Each person Achieves More.

*At the time of this study, our understanding was that federal regulations required a clinical support person to sign out of the clinical role and sign in again in a clerical role (scribe). We now know there is no such federal requirement.

Some physicians reported a reduction in at-home or after-hours work, from about 2 to 4 hours per day to approximately one hour per day.

Additional outcomes

The TEAM model allowed us to more easily integrate new initiatives into our practice and meet quality metrics by placing needed components within our workflow and checklist. For example, achieving Stage II Meaningful Use measures required that we print and furnish patients with a visit summary and a reminder to access our portal; something we easily incorporated into the MAs' expanded

responsibilities. We also met specific predetermined quality metrics that were part of a payment-withhold program. During the study period, we achieved scores at the 90th percentile and earned back our total withhold.

Finally, more of our patients completed advanced care planning discussions than the other 7 sites in our Honoring Choices Wisconsin cohort. This was achieved not only by integrating the process into our checklist, but because the MAs observed the MD-led patient conversations which they then emulated, presenting the advanced care planning information to patients before or after MD time with the patient.

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TABLE 3

4 scenarios involving different MA:MD ratios and scheduled visit lengths: How wait times and time with staff changed

Compared with the baseline MA:MD:visit length ratio of 1:1:20, the new ratios increased the time patients spent with staff and decreased their waiting time. This table includes all patient visits during the TEAM model measurement period. We did not calculate standard deviation.

MA:MD ratio	Scheduled visit length (min)	Patient visits measured	Pre-MD MA time (min)	MD + MA time (min)	Post-MD MA time (min)	Total time with staff person* (min)	Time in waiting room (min)	Time waiting in exam room (min)	Total wait time [†] (min)	Total cycle time [‡] (min)
1:1	20	75	8	14	0	24	3	6	9	44
2:1	30	27	6	18	1	29	1	0	1	44
2:1	20	22	8	16	1	27	8	0	8	44
3:2	30	42	7	15	4	26	2	0	2	38

MA, medical assistant; TEAM, Together Each person Achieves More.

*"Total time with staff" includes time patients spent with a physician or medical assistant, as well as time spent in point-of-care testing or radiology.

†"Total wait time" includes time patients spent in the waiting room after check-in and waiting alone in the exam room.

‡"Total cycle time" is the amount of time from patient arrival to departure from the clinic. It includes the time patients lingered in the waiting room after leaving the exam room to, for example, greet other patients, use the bathroom, or wait for a ride.

Errors and defects in care

With ongoing provider guidance and reinforcement, MAs became integral members of the primary care team. They were empowered through protocols to manage and order health maintenance testing and provide needed immunizations. They also began to identify potentially overlooked aspects of care. For example, MAs prompted physicians to retake vital signs, adjust medications, order labs, discuss previous lab results, and pursue specialty referrals or follow-up care.

Billing

Although we tracked billing, the TEAM model was not designed to influence revenue. We noted no significant change in level of evaluation and management billed regardless of staffing ratio. While our panel size increased as we implemented the new process, this change could have been due to normal variation. We do see opportunity to affect future billing by having coders train MAs, which could enhance documentation and increase revenue.

DISCUSSION

The TEAM Primary Care model reduced the time our patients sat unattended, increased our opportunities to meaningfully interact with them, and seemed to reduce our administrative load. By identifying and implementing ways to work as a more cohesive, interconnected unit, we began to address our work as a team rather than as individuals. After implementing the model, we noted several instances where the MAs caught potential errors in care, although we did not consistently track or measure changes in the rate of these occurrences.

Achieving these results also came with challenges. Investing in and maintaining a new model opened our eyes to unforeseen inconsistencies in our staff profile and to the cost and administrative support needed for implementation. Moreover, our entire team (patients, MAs, and physicians) had to undergo a major cultural shift to adopt a new model.

Personnel variation

We discovered that implementing and sustaining organization change is highly depen-

dent on constancy in human resources. When one team member was on vacation, sick, or leaving the practice, the process tended to fall apart. Hiring replacements and training employees well enough to fill in at a moment's notice proved difficult. Bringing new employees into this process was also labor intensive. Despite team members being very engaged in change, these staffing inconsistencies caused significant stress and necessitated pauses in the implementation of the new model (reflected in the timeline of our measures). Larger organizational buy-in and support would allow us to hire and train a larger pool of MAs in anticipation of these fluctuations.

Cost

Our small, rural family practice took advantage of WRMC's Primary Care Transformation project and the half-time process engineer and additional MA they provided. We question whether this model could be implemented without such support. While a process engineer might not prove necessary, expertise in process improvement is vital to help design and measure workflow and to identify opportunities for improvement.

Cultural change

Adopting a new model required asking every member of the team (patient, MA, and physician) to accommodate change and tolerate disruption. We anticipated patients might resist having an additional person in the room. All patients were informed of our new model at the beginning of the visit and told they could opt out. While we did not document patient resistance, JM recalled only 2 patients who expressed a desire not to have the MA present because of personal and sensitive issues. It's possible some patients did not feel comfortable opting out. But many patients expressed gratitude for having an extra set of ears and eyes to guide them through the visit.

It was more challenging to support MAs as they stepped out of their comfort zone to assist with documentation. It took time for MAs to grow accustomed to the protocols and checklists essential to our workflow. Without protocols, any point-of-care testing that could have been completed at the beginning of the appointment had to be done at the end. This

disrupted our workflow and increased patient wait times.

We correctly predicted MAs would have difficulty documenting the assessment, plan, and medical decision making. We discovered that MAs more easily categorized and articulated information when we reframed the assessment and plan in first-person and placed it under "Patient instructions." For this to occur, physicians had to learn to accurately articulate their thought process and instructions to the patient.

When training was provided, as previously described, MAs grasped the subjective section quickly. Surprisingly, they had most difficulty understanding terminology within the objective section. In the future, we would avert this problem by working closely with the human resource department. We believe there should be a newly defined position and additional training for MAs in these roles, since duties such as patient-coaching and documentation assistance may warrant separate certification.

Limitations

Our findings should be interpreted in light of several limitations. Implementing the new model was carried out in a single organization. The patients who were selected and agreed to be interviewed may have differed from the patient population as a whole. We did not measure some important outcomes, such as cost effectiveness and patient morbidity. We did not analyze the data to determine whether the apparent improvements in wait time and cycle time were statistically significant. In addition, measurement of any adverse effects was beyond the scope of this study.

Looking forward

The traditional model of physicians working individually with minimal support staff is no longer viable. To echo our co-author (CAS)'s recent statements on physician dissatisfaction, "The days of hero medicine, with the doctor doing it all, belong in the past."²¹ The new model appeared to alleviate some administrative burdens and increase physician time with patients. Pressures to achieve quality measures and growing administrative



With the TEAM model, we noted several instances where the MAs caught potential errors in care.

tasks have altered the role and responsibilities of each member of the team.

Any sustainable system must address the larger crisis of physician dissatisfaction.^{7,22} We cannot focus on a single perspective—patient, physician, or MA—at the expense of the system as a whole. If the health care system is to resolve the epidemic of burnout and physician dissatisfaction, new approaches to patient care must be imagined and realized. Although we faced many challenges in implementing and evaluating the TEAM model, attempts to overcome these challenges appear justified because of our overall favorable impression of it. Innovations like the TEAM Primary Care model may help us improve the well-being of not just our patients but also our health professionals and the health care industry as a whole.

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It's possible some patients might have felt uneasy with the TEAM approach, but many expressed gratitude for an extra set of ears and eyes to guide them through the visit.

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PRIOR PRESENTATIONS

Co-author Michael R. Strasser, MPA, presented this project at the 2015 i-PrACTISE conference in Madison, Wis, April 12-14, 2015. <http://www.fammed.wisc.edu/i-practise/>. The proceedings were not published or recorded.

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