Pivoting to the QUAD AIM—Lessons Learned From the Central Texas Market

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ABSTRACT

Introduction:

Since 2009, the Military Health System (MHS) has represented its mission as that of attaining the Quadruple Aim (QUAD AIM): increased readiness, better health, better care, and low per capita costs. The journey to reach the four goals is challenging and ongoing. Leaders in the MHS's Central Texas Market (CTM) sought to understand and overcome the root-cause obstacles that interfered with achieving the QUAD AIM. This process required a self-critical and thoroughly objective review of the behavioral economics of the system. We hypothesized that two corporate behaviors fed upon each other to create a vicious downward spiral. First, as a socialized (salary-based) system, the enterprise has a built-in incentive that covertly competes with the attainment of the QUAD AIM. Because additional work does not result in any material gain for its workers, the system regulates to a comfortable flow. Second, centralized leaders defer important management controls to tactical teammates due to their special medical expertise. This corporate behavior makes overcoming the first one challenging—keeping realization of the QUAD AIM elusive.

Methods:

Beginning in July of 2019, CTM leaders strove to replace the two identified corporate behaviors with more productive ones. First, in place of regulating to comfort, we directed teammates to focus wholly on achieving the QUAD AIM. Second, we exerted leadership from the top down to attain the QUAD AIM's four goals. Because the vicious cycle manifested itself differently in the realms of primary, inpatient, and specialty care, we adapted the application of our virtuous behaviors to match the problem set in each realm. In primary care, we replaced fee-for-service incentives with value-based ones. In inpatient care, we eliminated hidden incentives that resulted in inappropriate and unnecessary transfers. In specialty care, we consolidated the management of referrals, templating, and scheduling—taking central control of system productivity. The interventions in each realm required the introduction of new workflows, policies, and dashboards to ensure change.

Results:

Over a 2-year period, the CTM made a quantum to leap toward attaining the QUAD AIM. In our community based primary care homes, we significantly improved our operations as quantified by the value-based metrics of patient satisfaction, Healthcare Effectiveness Data and Information Set (HEDIS) quality metrics, access to care, and leakage. In the inpatient realm, we decreased monthly transfers by 73% (110 s to 30 s) resulting in higher bed censuses and multiple downstream positive impacts. In specialty care, we demonstrated our ability to return our specialty service lines quickly to high levels of production in the coronavirus disease-2019 crisis. Each of these interventions demonstrated large-scale movement toward the QUAD AIM.

Conclusions:

The CTM's actions demonstrate that the QUAD AIM can be attained in military medicine. Doing so requires the recognition of two destructive corporate behaviors. Through decades of hardening, these corporate behaviors have been imprinted upon the MHS, making them practically invisible as guiding currents in economic behavior. Counteracting them with persistent regulation to the QUAD AIM facilitated by proactive top-down leadership offers a solution.

In a 2020 Military Medicine commentary, we hypothesized that two corporate behaviors and an economic dynamic were responsible for flawed execution of healthcare delivery in the Military Health System (MHS).[1] We then described the Central Texas Market (CTM)'s local solutions, offering them as recommendations for the MHS enterprise. This piece presents the 2-year follow-up results of our approach.

Our thesis was that of the existence, within the MHS, of a vicious cycle fueled by two reinforcing corporate behaviors. The first behavior is that the MHS, a fundamentally socialized system, regulates its output to its comfort. This practice results in leakage of care to the civilian system, missed chances to optimally serve patients, lost opportunities to improve wartime skills, and divestiture of services.

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The second corporate behavior is that the MHS habitually and unconsciously defers important decisions to tactical experts. This practice deprives leaders of the ability to exert centralized command to combat the first corporate behavior and/or significantly improve the system. Finally, in terms of the economic dynamic, the civilian healthcare system exuberantly accepts the MHS overflow because it is incentivized to earn as much revenue as possible. In accepting high volumes of high-acuity patients, the surrounding network of civilian hospitals continuously becomes more efficient and more capable in its delivery of care.

Leaders in the CTM sought to improve its healthcare delivery by addressing these challenges. The CTM is composed of 14 primary care clinics feeding one of the Army's eight medical centers—the Carl R. Darnall Army Medical Center (CRDAMC). The market serves 1,00,000 beneficiaries in and around Fort Hood, Texas. Three civilian hospitals exist in close proximity to CRDAMC and offer ample primary care, inpatient care, and specialty care. Acknowledging that the economic dynamics of the American healthcare ecosystem were beyond our control, we focused our efforts on minimizing the impact of the two corporate behaviors. To do so, we asked market teammates to adopt two corporate behaviors that were diametrically opposed to the existing ones.

First, instead of regulating to comfort, we asked the market to commit unflinchingly to achieving the Quadruple Aim (QUAD AIM), the MHS's publicly professed "Guiding Principle." The QUAD AIM is a value-based compilation of four aspirations. The first is to optimize the readiness of the men and women of the Armed Forces. Readiness, for medical personnel, depends on them being expert in their combat roles. The sustainment of a "Ready Medical Force" is therefore an important component of the "Increased Readiness" aim. The QUAD AIM's second goal, "Better Health," is a version of the readiness aim, but applies to all beneficiaries. Its focus is to keep soldiers, family members, and retirees disease-free, uninjured, and functioning at their highest condition of health. "Better Care," the third aim, refers to the provision of highly safe and high-quality care delivered with attentiveness to the patient experience. The final aim, "Low per capita cost," focuses the MHS on efficiency.

Our second corporate solution was to exert leadership from the top down to maximize impact in achieving the QUAD AIM. To begin, we created dashboards to visualize the market's actions in real time. With such intelligence, we proactively and continuously steered the organization toward the QUAD AIM. We did so by publishing policy, workflows, and schedules. We then held ourselves and our teammates accountable to meet achievable standards—correcting tactical-level deviations as they occurred in real time.

Because these two solutions were aimed at reversing root-cause behaviors, we believed that their impacts would be wide-reaching. At the same time, we acknowledged that the two mandates required customized application in the primary care, inpatient care, and specialty care realms.

PRIMARY CARE

Before the introduction of this performance improvement project, the CTM approached its primary care mission using a free-for-service (FFS) model. In such models, billing insurance companies is the "end" and high productivity is the "way."[2] In the CTM, administrators scheduled patients into 20-minute face-to-face (F2F) appointments for most medical needs. This practice, consistent with civilian models, provided a predictable and relatively comfortable throughput for providers. Even so, its dependence on filling templates with routine care made it difficult for patients to access the system when sick. With little scrutiny from the front office, providers and teams routinely referred acutely ill patients to urgent care centers and emergency departments (EDs), resulting in high rates of "leakage." Such an approach reduced tension on providers but was costly financially and in the currency of patient trust. The patient experience, a key component of the "Better Care" aim, was valued only inasmuch as the rigid scheduling system would allow. Flexibility and front-desk empowerment were not foundational features of the model. Prevention of illness (better health) was likewise not a key feature of the model.

To better attain the QUAD AIM in primary care, the CTM rebranded its community-based primary care homes as QUiC clinics: Quality, Urgent, internet and phone, Care clinics. Leaders actively discouraged maximum-capacity F2F booking for routine medical needs. Instead, the CTM urged QUiC clinics to manage routine patient needs with phone calls, email, and synchronous virtual video visits. The reduction of the demand for F2F appointments created time in which providers could manage walk-ins (urgent care) and optimize actions designed for disease prevention. A value-based approach that embraces the Army's current primary care capitated funding model; the tenants, procedures, and workflows of the QUiC methodology are published elsewhere.[3] After introducing the QUiC model (and the policy and the workflow to accomplish it), CTM leaders held QUiC clinic leaders accountable for metrics clearly linked to the QUAD AIM: (1) Patient satisfaction (better care), (2) Healthcare Effectiveness Data and Information Set (HEDIS) quality metrics (better health and increased readiness), (3) access to care (better care), (4) leakage (lower cost), and (5) empanelment (lower cost).

Table I demonstrates the QUiC clinic initiative's impact on the five value-based metrics. In short, all value-based metrics improved substantially. Of note, QUiC clinics offer both appointment-based and urgent care (open) access—a detail which is not apparent in appointment-related data. In parallel with increasing access to care, leakage decreased significantly. The market now consistently flirts with the 7% leakage benchmark, having fully recovered from its status as

TABLE I. Primary Care. The Five Value-based Care Measures of Effectiveness before and after the Transition to Quality, Urgent, internet and phone, Care clinics (QUiC)

		July 2019	January 2021
Patient satisfaction (after-visit surveys)	Overall satisfaction with visit	89.7	95.2
	Would recommend clinic to friend or relative	86.7	95.3
	Able to see provider when needed	80.4	92.2
HEDIS (percentage of eligible enrollees that have completed evidence-based screening. The percentiles are in relation to the national average)	Breast cancer screening	76.0% (<50th percentile)	83.8% (90th percentile)
	Cervical cancer screening	77.9% (<50th percentile)	85.6% (90th percentile)
	Colon cancer screening	74.5% (75th percentile)	84.5% (90th percentile)
	A1C screening (diabetes)	88.7% (<50th percentile)	94.1% (75th percentile)
	A1C managed to less than 8	64.1% (75th percentile)	71.2% (90th percentile)
Access to care	Future appointments (days until third routine appointment)	15.4	2.8
	Acute appointments (days until third acute appointment)	1.1	1.1[a]
Leakage (percentage of enrollment seeking care elsewhere per month)		12.2	9.6
Enrollment		35,048	33,002

[a]QUiC clinics have unlimited access to acute appointments.

the Department of Defense's worst market in terms of leakage in the fiscal year 2019. The CTM is also now the no. 1 market in virtual video visits in the Department of Defense—offering more than twice the number of virtual appointments per day than the no. 2 market. The metrics trended over time are not depicted in the table. Trends are strong, consistent, and ever improving. Because of the strength of the data, the CTM's QUiC initiative was selected as a "Top Three Finalist" from among 76 practices entered in the MHS's 2021 Clinical Quality Leading Practice Program.[4] More information about the successes of QUiC clinics is available in a separate publication.[5]

INPATIENT CARE

In inpatient care, the two corporate behaviors converged to create conditions in which CRDAMC's wards were rarely filled to capacity and frequently occupied by low-acuity patients. CTM leaders theorized that these conditions existed because providers regulated to "safe" positions in terms of admitting patients from the ED. With no financial incentive to do otherwise, providers habitually transferred complex patients, high-acuity patients, and even undeclared patients out of the ED. The uniquely American problem of ED crowding and prolonged boarding was not a phenomenon routinely encountered by CRDAMC. We believed that CRDAMC was not an outlier in the inpatient realm and that MHS community hospitals (and even medical centers) have instead become efficient at moving patients to profit-seeking competitors. As an example, in the month of July 2019, at its baseline, the CTM transferred 108 patients out of the ED. Of these, 84 could have been treated at CRDAMC.[6]

In consonance with its primary care approach, the CTM applied its dyad of corporate solutions in inpatient care. Our goals were to improve readiness, lower costs, and improve the patient experience (better care) by managing all appropriate inpatients at CRDAMC. To do so, we created policy complying providers to admit all patients for which CRDAMC had the capability to treat. Preemptive transfers (transferring patients based on a prediction that they might need care beyond CRDAMC's capabilities) and transfers based on knowledge gaps were forbidden by policy. To enforce these standards, hospital leadership followed up all ED transfers, determined whether capability mismatches existed, and then, through continuous process improvement, educated providers on the flaws in the clinical decision-making.

Holding providers accountable for their transfer decisions was effective in reducing inappropriate transfers as is depicted in Figure 1. We decreased inappropriate transfers from 84 per month to an average of less than 10 per month. The 70+ additional inpatients per month translated to an increase in our medical-surgical-pediatric unit bed census of 4 per day and our intensive care unit (ICU) bed consensus of 1.5 per day. What is not depicted in the data—but clear to providers, nurses, and staff—is that treating higher-acuity patients supports all aspects of the QUAD AIM. It increases the readiness of the medical team, reduces costs, ensures patients get high-quality care, and contributes to a satisfactory patient experience. Furthermore, in exercising its full inpatient capacities, CRDAMC became less risk adverse and more confident. In the process, it expanded its ICU beds and gained new capabilities (including tele-ICU technology and continuous renal replacement therapy). The CTM strengthened its bonds to MHS partners by pursuing consultation for knowledge gaps. By relentlessly pursuing the QUAD AIM in inpatient care, CRDAMC replaced a vicious cycle of divestiture with a virtuous one of capability investment and growth. As with its

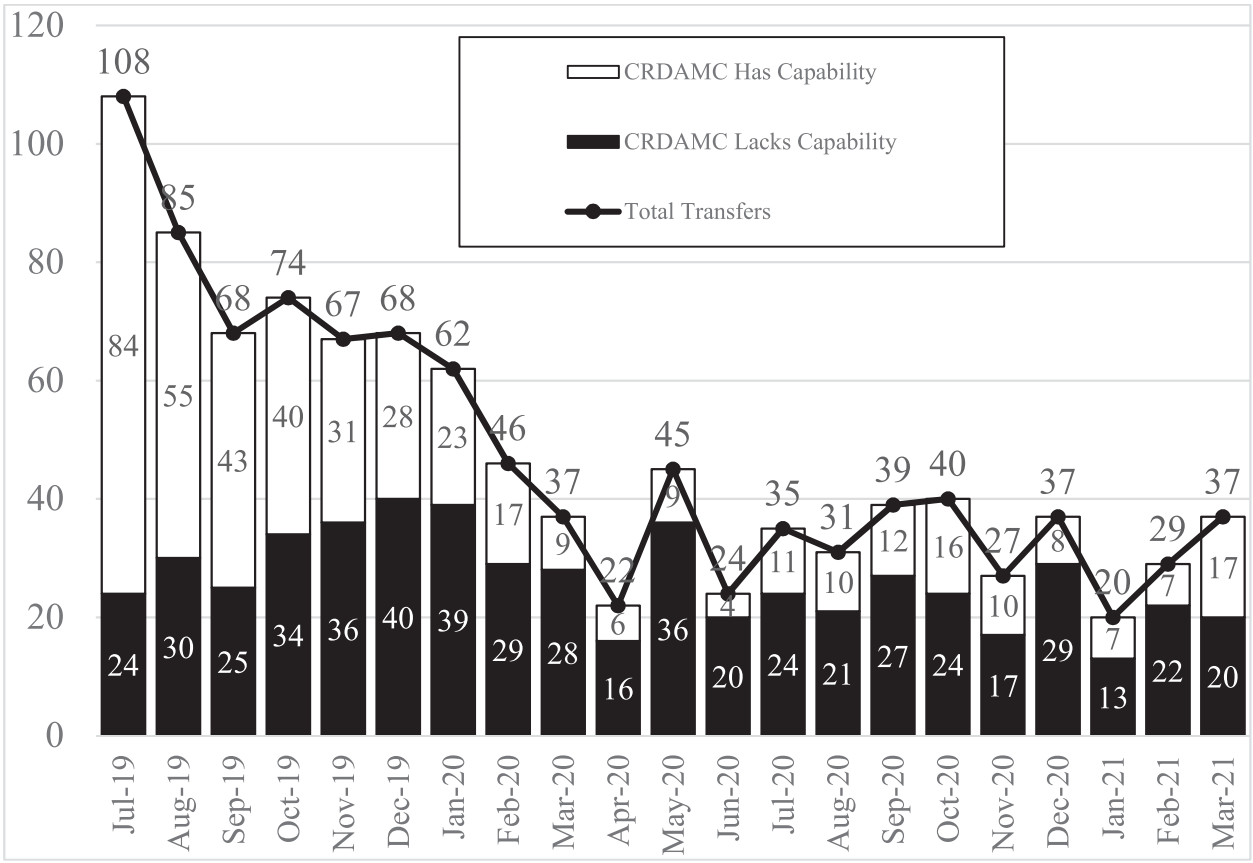

FIGURE 1. Transfers made out of the Carl R. Darnall Army Medical Center (CRDAMC) Emergency Department (ED) July 2019-March 2021. This figure demonstrates the early and sustained reduction in inappropriate transfers (in white) achieved by CRDAMC's performance improvement efforts. The team follows up all transferred patients by obtaining discharge summaries from surrounding hospitals. The team then determines whether the care provided could have been provided at CRDAMC. Those transfers that could not have properly been managed at CRDAMC, due to a capability gap, are depicted in black. These figures have remained relatively constant. Inappropriate transfers decreased substantially and have remained low due to ongoing surveillance.

primary care entry, the CTM's ED recapture initiative produced strong enough outcomes to be recognized as a "Top Three Finalist" by the 2021 MHS Leading Practice Program.[4] More information on the success of the CTM's ED recapture initiative is available in a separate publication.[6]

SPECIALTY CARE

At baseline, specialty care in the CTM was similarly afflicted by the dyad of destructive corporate behaviors. In this realm, front office leaders granted decentralized providers and administrators the powerful option to defer referrals to the civilian network. Without guidance to do otherwise, providers exercised the privilege with little thought to the hospital's well-being in terms of skills, reputation, and ability to achieve the QUAD AIM. Instead, providers selected (or asked administrators to select) the patients for which they were most comfortable treating, filling templates at the pace they deemed appropriate. Within CRDAMC (and likely the MHS writ large), specialist providers built customized practices, comfortable that what was leaked to the network would be managed by others. Lack of productivity was another challenge under the legacy design. Unlike primary care, the Army maintains an FFS incentive model for specialty care. Without the proper tools to intervene in real time, however, leaders typically learned of missed productivity marks months after the fact. The lack of centralized specialty management was responsible for an inherently reactive system.

To combat this destructive dynamic, CTM stood up a centralized management office. The Centralized Referral Scheduling and Templating Office (CRSTO) is designed to manage case mix, volume, and throughput for all specialty providers. It pulls the management responsibility for achieving workload standards out of individual clinic and provider hands and places it under the control of market leaders. When fully operational, the CRSTO will ensure that providers practice the full range of their specialty, that schedules are completely filled to guarantee that workload standards met, and that patients do not leak to civilian providers. It will release providers from administrative tasks, allowing them more time to sharpen their clinical skills.

Author and business consultant Peter Drucker, said "If you can't measure it, you can't improve it." Still partially built and only at Initial Operating Capability, the CRSTO's

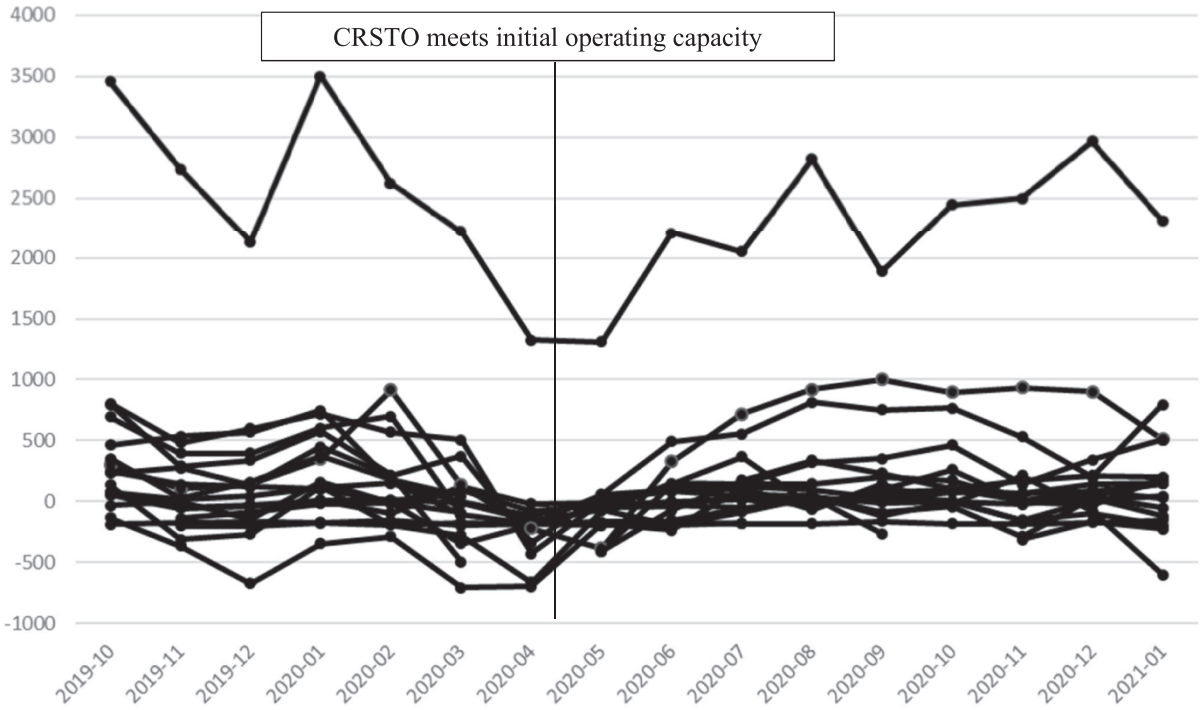

FIGURE 2. The relative value excess or gap in Carl R. Darnall Army Medical Center (CRDAMC)'s specialty service lines depicted from October 2019 to December 2021. This figure demonstrates the effects of the Centralized Referral Scheduling and Templating Office (CRSTO) on the resumption of work in all service lanes during the coronavirus disease-2019 (COVID-19) crisis. Each line represents the productivity excess ((in terms of Relative Value Units or RVUs) above the standard depicted as zero) or gap (data points below the standards) displayed over time for a service line within the CRDAMC. The CRSTO established an initial operating capacity in April of 2020. It enabled the front office to visualize service lines that lagged in their resumption of pre-COVID-19 production. No service line was allowed to remain in a cold status for longer than 2 months. Indeed, fewer service lines are currently missing productivity marks as compared to the pre-CRSTO baseline.

main achievement to date is its real-time measurement and presentation of specialty service line production to CTM leaders—enabling proactive (and not reactive) central control. Figure 2 demonstrates one of the dashboards that the CRSTO provides to market leaders on a monthly basis. It is important to note that the presented timeline is overlayed upon that of the worst days of the coronavirus disease-2019 (COVID-19) pandemic—a time in which hospitals, by order, decreased their productivity. The mandated dip in all service line productivity is evident in April 2020. What is notable is the speed that CRDAMC was able to return its specialty services to near-full operational capacity. When conditions allowed and with COVID-19 protections in place, CRDAMC pivoted rapidly back to the QUAD AIM, increasing the readiness of its providers, medics, and patients. The CRSTO's real-time dashboards allowed CRDAMC to see what service lines were lagging in returning to the new normal. In each case, CTM leaders rapidly and proactively intervened to resource or correct clinical leadership unclear on market intent. Figure 3 provides a comparison of CRDAMC to other Army medical centers (MEDCENs) in terms of the speed of resumption of operating room (OR) caseload. The CRDAMC returned to pre-COVID caseload levels more quickly than any other MEDCEN in the Army (on a scale of several months). The CTM rebound was so profound that MHS clinical leaders asked CTM leaders for a presentation on its underlying practices. The CTM has not yet completely resumed pre-COVID productivity across the board, but the market has plans for each underperforming service line. The CTM leadership is firmly in control and accountable for the market's specialty mission.

WAY FORWARD

The mental model of the MHS suffering from the self-inflicted wounds of regulation to comfort and deference to tactical leadership is imperfect and incomplete. We created the model for academic and performance improvement reasons. The postulated vicious cycle provides a broad rule and does not acknowledge its many exceptions. It is a harsh over generalization and blind to the service of the patriots that work within it. We acknowledged all of these points in our original introduction to the theory.[1] Even so, the CTM's experience suggests that the antidotes of regulating to the QUAD AIM and leading from the top down are effective and powerful in overcoming the challenges facing the MHS. In applying our corrective behaviors, we learned several key lessons that may

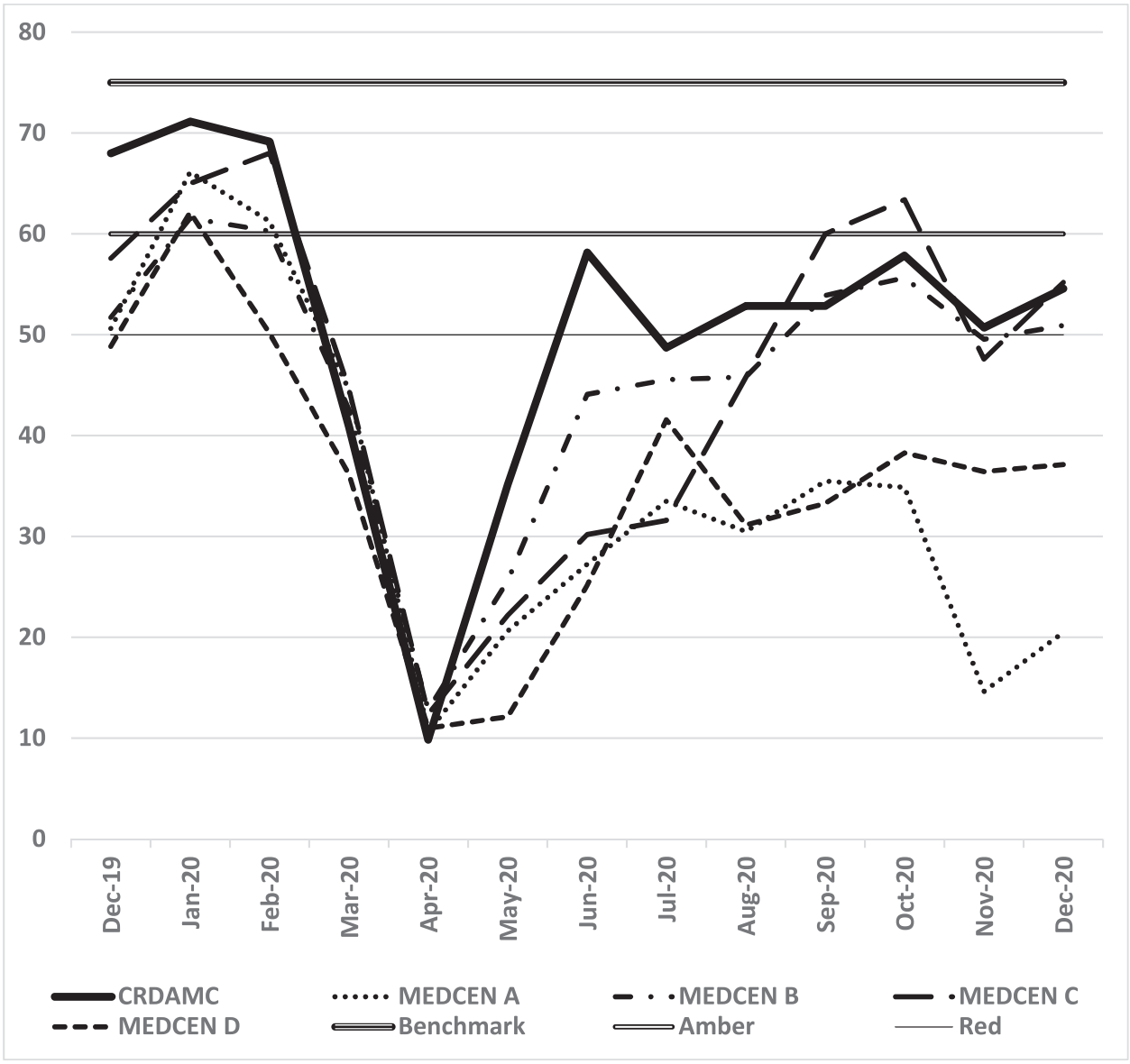

FIGURE 3. Operating room (OR) cases by month from December 2019 to December 2020. This figure enables the visualization of Carl R. Darnall Army Medical Center (CRDAMC)'s speed of return to the new normal as compared to other like-sized Army medical centers (MEDCENs). CRDAMC, with the visualization enabled by the Centralized Referral Scheduling and Templating Office (CRSTO), "bounced back" more rapidly than all other MEDCENs in terms of its operating room (OR) throughput. The failure to return to baseline conditions is based on staffing shortages induced by coronavirus disease-2019 (COVID-19) manpower requirements. CRDAMC is tracking its service line productivity in real time and has implemented a strategy to return to normal on May 1, 2021.

benefit the MHS. These lessons are listed below as essential tasks.

First, we recommend that the MHS adopts QUiC clinics or some other value-based primary care model for all of its primary care mission. The expansion of the use of telephone calls, emails, and virtual video visits is an essential task. The MHS must follow trends in modern technology and extend its use to not just family members and retirees but to soldiers. To attain this end, the CTM has introduced a "virtual first" policy in all of its remaining primary care homes—including those manned with borrowed military manpower. At the same time, the practice of measuring productivity in primary care must be eliminated. The conflicts between FFS and value-based incentives are so much in opposition that a hybrid of the two will engender the worst—not the best-of both.[3]

In regard to inpatient care, through risk tolerance and iterative organizational learning, centralized leaders must push providers to practice at the top end of their privileges—ensuring that the entire system improves in a virtuous cycle. Essential to this task is connecting smaller hospitals with

those possessing the expertise to erase knowledge gaps. We believe that CRDAMC's development of a strong network of distant MHS consultants (to include tele-ICU) is a leading practice—but so too is the concept of a virtual medical center. Military specialty consultation is the antidote to the existence of widespread local knowledge gaps that otherwise lead to ED leakage. The mere presence of the resource, however, is not enough. Once a virtual medical center is erected, leaders must ensure its use by oversight and management from the top down.

The CRSTO took the longest to build and has the most remaining potential. Achieving productivity standards through centralized real-time visibility and proactive management is just the beginning. The CRSTO has begun to direct specific referrals to providers based on case mix and competency gaps. The completion of this essential task will ensure that deployed providers continuously possess the full-spectrum competencies required by their profession. In the future, CRSTO leadership will begin applying value-based ideologies to specialty medicine. It will then begin a virtuous cycle of organizational learning enriching both primary and specialty services. The ultimate goal is to achieve a proper balance of care between the two realms—aiming for published optimal ratios.[7] To achieve this goal, the CRSTO will prohibit the inappropriate shifting of primary care into specialty appointments. Instead, it will direct primary care providers to use referral guidelines and evidence-based guidelines—improving their skillsets. At the same time, CRSTO policy will ensure that specialists achieve the lowest possible ratio of clinic appointments to OR time, maximizing their time in the procedure room or OR.

This work is limited by the nature of the CTM. Applying the recommendations uniformly to all markets is not recommended. Full-spectrum MEDCENs may not be as afflicted by ED leakage as community hospitals. The recommendations pertaining to specialty recapture and primary care reform may harvest more fruit in large hospitals. Conversely, ED recapture efforts may be suitable for small and medium hospitals. As with all new findings, tempered application is also recommended. Rigid centralized management has weaknesses as impactful as loosely regulated decentralized control. We advocate for attaining the correct balance—not surging to the centralized extreme.

CONCLUSION

Since adopting the QUAD AIM as its "North star," in 2009, the MHS has approached it as an aspirational ideal. This thought process should be extinguished. We believe that the QUAD AIM is practically achievable. The MHS has been held back by two corporate behaviors so heavily intertwined with our identity that they have not yet been critically deconstructed. In this article, we have given them credit for ongoing, patient, and persistent erosion of the promise of the QUAD AIM. In actively counteracting them, the CTM has significantly improved its capability to reach the potential of the QUAD AIM at a nominal cost. While we have made significant strides at the 2-year mark, our journey is just beginning.

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None declared.

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