

EXPERIENCE REPORT

Continuous quality improvement at the frontline: One interdisciplinary clinical team's four-year journey after completing a virtual learning program

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Abstract

Background: The Veterans Health Administration (VHA) is the largest integrated health system in the U.S. and has identified the learning health system as a strategic priority. Clinicians and staff engaging in active learning through continuous quality improvement (QI) is a key pillar for learning system maturity. An interdisciplinary frontline team at a VHA medical center participated in the Learn. Engage. Act. Process. (LEAP) virtual coaching program to learn how to conduct multidisciplinary team-based QI cycles of change. These clinicians lead and deliver the MOVE! weight management program, an evidence-based comprehensive lifestyle intervention. The team worked to continuously improve patient weight loss by engaging in incremental learning cycles of change. The aim of this study is to tell the story of this team's learning experience and the resulting positive reinforcing loop with patient outcomes.

Methods: This is a mixed methods case study description of one team that participated in the LEAP Program that provides hands-on QI learning for frontline teams with virtual coaching and a structured curriculum. Autoethnographic qualitative descriptions of team experiences over time illustrate this team's continued engagement in learning loops. Multilevel linear modeling was used to assess patient outcomes before vs after the team's participation in LEAP.

Results: The team's participation in LEAP provided a set of fundamental QI skills and established a commitment to continual learning. Incremental improvements led to significant weight loss for patients who participated in MOVE! after the team completed LEAP (mean = 9.80 pounds; SD 10.43) compared to the pre-LEAP time period (mean = -6.83 pounds; SD 9.63).

Conclusions: Despite competing priorities and time limitations, this team's experiences provide a positive vision of how team engagement in data-driven continuous learning is feasible at the frontline and can lead to higher job satisfaction and stronger teams. These types of team activities provide much-needed backbone to being a mature learning health system.

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KEYWORDS

case study, quality improvement, Veteran

1 | INTRODUCTION

The Veterans Health Administration (VHA) is the largest integrated health system in the U.S. and has identified the learning health system as a strategic priority.¹ Strong learning systems are determined by the degree to which “clinical informatics, incentives, and culture are aligned to promote *continuous improvement* and innovation, with best practices seamlessly embedded in the delivery process and new knowledge captured as an integral by-product of the delivery experience [emphasis added].”² Furthermore, VHA includes high-reliability organization (HRO) principles as part of this strategic priority. HRO emphasizes the important role of empowered frontline clinicians and staff leading continuous performance improvement and deference to the expertise that frontline employees have about their own work settings and processes. A central pillar of HRO is that everyone, everywhere is engaged in continuous quality improvement (QI).³

It is challenging for frontline teams to do continuous QI because many organizations fail to sufficiently make the investments necessary to support this work.⁴⁻⁶ QI training is often delivered through in-person workshops or quality collaboratives focused on a specific topic within a specific time frame, often including face-to-face interactions with other teams and coaches with expertise in QI.⁷⁻⁹ It is challenging for trainees to apply new knowledge gained through workshops to their everyday clinical work setting.¹⁰⁻¹³ Virtual (Internet- and/or phone-enabled) adaptations of collaboratives are increasingly used but often include didactic learning sessions without on-going coaching.¹⁴⁻²⁰ One large-scale quality collaborative in VHA provided virtual monthly coaching but only *after* teams started executing their Plan-Do-Study-Act (PDSA) cycles of change.^{17,18}

To address many of the common challenges to frontline-driven QI, the pilot version of the Learn. Engage. Act. Process. (LEAP) Program was designed as a virtual, interactive, 21-week, structured program designed to develop QI skills for frontline teams. LEAP eliminates the need for costly travel by providing virtual coaching to teams and follows a structured curriculum focused on weekly hands-on application (learning while doing) leading to completion of a team-developed QI cycle of change.²¹ The goal of LEAP is to build foundational skills for executing continuous improvements with the long-term aspiration of enmeshing, sustaining, and spreading an improvement mindset to patient care, a core capability for learning systems.

The aim of this Experience Report is to describe the experiences of one team that participated in LEAP. This is a frontline clinical team that delivers obesity treatment within a VHA medical center in Asheville, NC USA. We provide a narrative of their learning experience and how it led to their engagement in continuous QI over a four-year period.

This work was developed as a non-research activity (ie, without IRB approval under the authority of VHA operations) and complies

with the guidance about authorization of non-research manuscripts outlined in VHA Program Guide 1200.21: VHA Operations Activities That May Constitute Research.²² All authors attest that the activities that resulted in the production of this manuscript were conducted as part of the non-research activities conducted under the authority of the VHA National Center for Health Promotion and Disease Prevention.

1.1 | Questions of interest

Is it possible for frontline clinical teams to engage in continuous QI within busy clinical settings? If so, what is the experience of such teams?

1.2 | Details of the clinical topic

VHA medical centers offer evidence-based comprehensive lifestyle programming to address obesity via a program called MOVE! .²³ MOVE! is delivered in a variety of formats including group, individual, and tele-modalities.¹ The most common modality, group-based MOVE!, uses a structured 16-week curriculum, following published national guidance.²⁴ Despite the availability of MOVE! in most VHA medical centers and community-based outpatient clinics,²³ the prevalence of obesity in Veteran primary-care patients remains high.^{25,26} System-wide participation in MOVE! is associated with modest short-term weight loss²⁶ and the odds of clinically significant weight loss ($\geq 5\%$) increases with six or more contacts within 12 months.²⁷

In 2015, the MOVE! program at the VA Medical Center in Asheville, North Carolina, while relatively high performing, was not meeting internal performance goals for weight loss. The local MOVE! team wanted to improve program performance by connecting patients' deeply held values or goals more strongly to their weight loss efforts. This goal was motivated by VHA's commitment to Whole Health, an approach that empowers and equips patients to take charge of their health in a personally meaningful way.²⁸ Whole Health in the VA is premised on the US national movement toward patient-centered care; moving away from discussions based on disease-focused care (“What is the matter with you?”) to patient-centered care (“What matters to you?”).²⁹ The heart of Whole Health is for the care team to understand multi-faceted life goals and priorities and through this process, get to know participants as people; together, the patient and their care team develop a personalized health plan based on the patient's “own values, needs, and goals.”³⁰ This approach has been highly successful in other health domains.³¹ Incorporating Whole Health would help the team continue their efforts to move from a disease-focus (eg, treating obesity) to a more holistic goal-oriented focus.³² While the

national MOVE! curriculum already embodied Whole Health concepts (eg, helping Veterans link weight management to what's important to them) to increase motivation and personalize goal-setting, this MOVE! team identified additional opportunities to more deeply integrate Whole Health into their program to improve outcomes.

The team attended a 6-day Whole Health training to help them achieve their goal to integrate Whole Health principles more deeply into their Veteran-centered weight management program. About the same time, they had the opportunity to participate in a pilot of the LEAP program. Though they already had a shared belief that change was needed, they welcomed the opportunity to be coached with hands-on learning; they had not previously engaged in formal QI.

2 | METHODS

2.1 | Context and setting

This paper was collaboratively developed by members of the Asheville team (AJT and EL), the lead developer of LEAP (LJD; implementation scientist), and a LEAP coach (CHR; qualitative analyst) using an auto-ethnographic approach.³³ The MOVE! program at the VA Medical Center in Asheville was led by a part-time MOVE! program coordinator. Prior to LEAP participation, in 2015, facility leadership agreed to expand the position and hire a Registered Dietitian to serve as MOVE! Coordinator, allocating 70% of her time to this role, which allowed for additional MOVE! program offerings. A Clinical Psychologist who was the Health Behavior Coordinator (HBC) had overall program oversight (EL). These roles were supported by a clinical team that included a physical therapist (PT) and PT Assistant. The group MOVE! program was based on a structured curriculum and comprised sixteen weekly sessions, as specified in published national guidance.²⁴

Patients who are candidates for MOVE! have a Body Mass Index (BMI) ≥ 30.0 kg/m² or a BMI of 25.0 to 30.0 kg/m² with one or more obesity-related conditions such as hypertension, diabetes, sleep apnea, dyslipidemia, arthritis, or metabolic syndrome. Exclusion criteria include limited life expectancy or serious illness. Those who indicate readiness to attempt weight loss are presented an opportunity to participate in MOVE!.³⁴ Patients were counted as new and unique if they participated in MOVE! for the first time or had at least a 6-month gap in participation. The 6-month gap was established as policy by the VA National Center for Health Promotion and Disease Prevention, based on clinical experience, analysis of administrative visit data, and clinical judgement, to distinguish returning patients starting with a fresh episode of care, from those who may be spreading treatment sessions over a longer period of time.

2.2 | LEAP QI learning program

LEAP is a virtual learning program with a structured curriculum, online platform with learning resources, and virtual coaching (individual) and collaborative (with multiple teams) sessions. We summarize the program here and more details are available in a published article and appendix.²¹

LEAP is based on the content from a massive open online course (MOOC) developed through the collaboration of HarvardX and the Institute for Healthcare Improvement (IHI). The MOOC focused on training individuals in use of PDSA cycles; LEAP adapted content for teams at the frontline. In brief, Affinity Diagramming is used to brainstorm opportunities for improvement, an Impact/Effort Matrix is used to prioritize potential opportunities, Fishbone Diagram and "5 Whys" exercises are used to understand root causes of those opportunities, and run charts are used to track progress toward improvement goals (see Supporting information Appendix A for LEAP curriculum). Often, multiple cycles of improvement are completed to accomplish a high-level goal; we will describe one team's experiences in doing so. Using PDSA cycles of change for QI has parallels to the learning health system constructs of conceptual learning (assessing cause and effect and designing a theory) and operational learning (implementing changes and observing the results), also known as the observe-assess-design-implement cycle.³⁵ LEAP curriculum and resources are designed to fit the needs of busy frontline teams who typically have little time to dedicate to QI learning, but have expert understanding of their context. LEAP lasted 21 weeks to give teams time to learn and apply new methods on their way to completing a PDSA cycle of change with the assistance of a trained coach. The curriculum is made available in small units each week via a shared online platform and includes interactive coach support, written guidance, videos, and templated tools. The ultimate goal of LEAP is to provide frontline teams the fundamental skills needed to execute continuous-related cycles of change that yield measurable improvement over time.

The Asheville team participated in the pilot version of LEAP with two additional teams from two other VHA medical centers. Supporting information Appendix A lists the curriculum; each week, teams received one-hour, one-on-one, virtual coaching sessions or participated in a virtual collaborative learning session with all pilot teams. Coaching sessions focused high-level review of new curriculum, current assignments, and opportunity to ask questions. Virtual collaborative learning sessions focused on creating a supportive community across teams to build a foundation for sustainment and spread of improvements. In week 21, the teams shared what they learned, their accomplishments, and future plans. No team had formally approved dedicated time for LEAP, but team members did commit to carving out 2 to 4 h per week for learning and QI work. Team commitment to LEAP participation was measured in several ways including attendance at coaching calls, participation in virtual collaboratives, and completion/submission of assignments. Each team was encouraged to meet weekly outside the coaching calls and virtual collaboratives, to plan, execute, and monitor their project, evidenced by the completion of LEAP assignments.

Coaching was supplemented with written and short video-based guidance; team leaders received a checklist via email to complete each week. QI tools and exercises, plus review of local program data, informed opportunities for improvement, enabled the team to brainstorm and prioritize improvement opportunities, assess root causes, and design specific measures (process, outcome, and balancing measures) to monitor progress. Local program data were extracted from

the VHA Corporate Data Warehouse (CDW) and included site-specific reports on the number of new and returning MOVE participants, number of MOVE encounters per participant, and weight outcomes at baseline and follow-up time periods (6, 12, 24, and 36 months). This information was used to guide development of a Project Charter, a document that is designed to be discussed amongst the LEAP team and shared with other local leaders and peers to increase buy-in and support for their QI work (Supporting information Appendix A).³⁶

2.3 | Data collection

Patients who enrolled in MOVE! from 2015 to 2019 were included in the analysis sample. MOVE! patients have a BMI ≥ 30.0 kg/m² or a BMI of 25.0 to 30.0 kg/m² with one or more obesity-related conditions (eg, diabetes). The Asheville team tracked attendance and measured weights for each participant at each session; data were entered into an MS Excel tracking spreadsheet and into the electronic medical record system and double-checked for consistency between the two sources.

2.4 | Measures and analyses

Data were analyzed by cohorts (ie, clusters) of patients who all participated in the same 16-week group MOVE! program. Weight change was calculated as the difference between baseline weight (weight recorded at the patient's first MOVE! session) and weight four months later; percent weight change was calculated as the change in weight divided by baseline weight. Average weight change was computed for each cohort of patients. Cohort averages were compared before, during, and after the team's participation in LEAP training. Weight data were evaluated using descriptive statistics and multilevel linear modeling was used to assess patient outcomes before vs after the team's participation in LEAP. Cohorts are included as random effects, providing each cohort with its own intercept. All analyses were conducted in the R language for statistical computing (version 3.6.0)³⁷; multilevel modelling was generated using the lme4 package (version 1.1-21).³⁸

2.5 | Qualitative data

Autoethnographic qualitative data comprised team members telling their own story (AJT and EL) through interviews, emails, and their active participation in developing this manuscript. All information was member-checked with the team for accuracy.

3 | RESULTS

3.1 | Quantitative outcomes

Figure 1 shows percent weight loss by MOVE! patient cohort before, during, and after team participation in LEAP. Table 1 summarizes the

number of cohorts and number of patients, plus average weight loss for the three periods before (May 5, 2015–March 5, 2016), during (November 7, 2016–October 31, 2016), and after (November 22, 2016–April 30, 2019) the team participated in LEAP. MOVE! patient cohorts post-LEAP (2.76% loss from baseline; SD 10.45) lost significantly more weight compared to pre-LEAP cohorts (3.80%; SD 9.93; $P = .001$ for difference). Weight loss in pounds exhibited similar differences. Increases in weight loss (in terms of percentage or pounds) in the post-LEAP cohorts were statistically significant.

3.2 | Satisfaction

Satisfaction of clinician LEAP team members was measured via a 21-item survey across five domains (improvement coach support, quality of curriculum materials, organization of materials online, number of assignments, and technology requirements of the program) as well as intention to continue QI efforts. While ratings were consistently high, the element with the lowest satisfaction score was “I had the time to do the work required during the 21-week LEAP program.” Responses to these satisfaction questions have been published for teams participating in the first year of a larger trial of the LEAP program.²¹ Asheville's scores were not included because they were a pilot team; however, their ratings were in line with the high ratings from these other teams. One co-author (EL) was a member of the LEAP team and another joined the team after completion of LEAP (AT).

3.3 | Narrative of LEAP experience

The focus of this Experience Report is to share the story of the team's experience participating in LEAP as they developed their project charter and a description of their QI work in the years after completing LEAP. The team first sought and received enthusiastic permission from their facility director to participate. This level of permission was not a requirement of LEAP participation but, though no extra resources were provided, was indicative of the overall supportive culture for improvement at this facility. While some members of this team had been working together already, their collective decision to participate in LEAP set them on a path to engage more dietitians and other clinicians and staff more deeply in cycles of incremental improvements designed to elevate the performance of their program and better meet the needs of their patients.³⁹

In June 2016, the team began the LEAP program. As part of this team's overarching goal to incorporate Whole Health into their MOVE! program, they wanted to use a Whole Health Scorecard with their patients to increase their engagement and weight loss. The scorecard was designed to help patients easily connect their own weight loss goals with their values and life aspirations to enhance their motivation and treatment outcomes.

The team leaders worked with their LEAP coach in weekly sessions to plan their change (Plan), execute their change (Do), measure

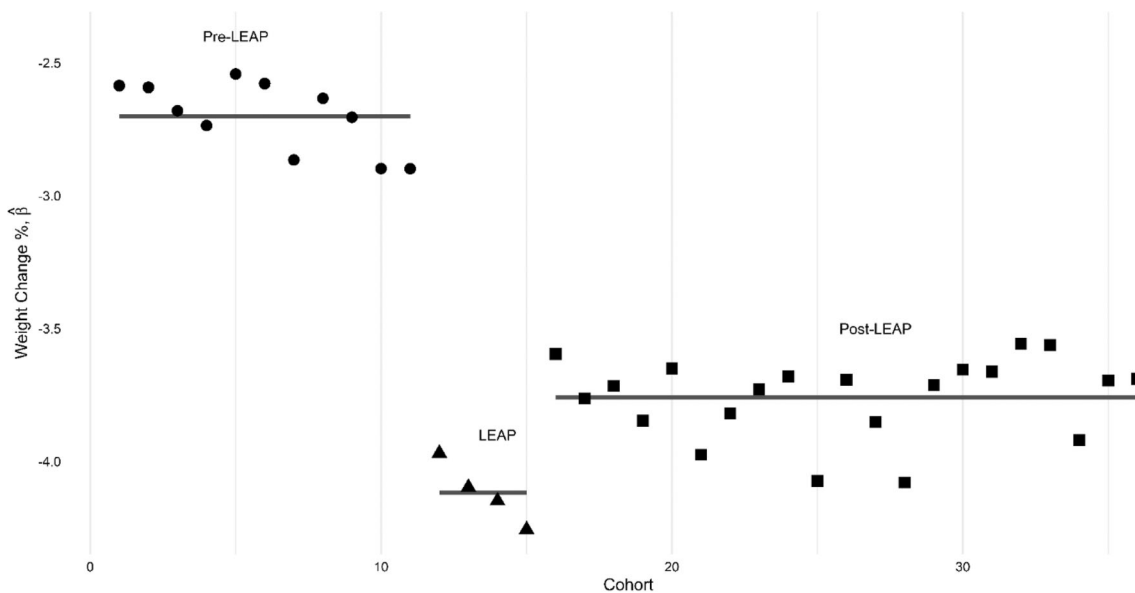


FIGURE 1 Percent Weight Change (4 months post-baseline) by Cohort. ● Average weight loss for MOVE! cohorts before team participation in LEAP. ▲ Average weight loss for MOVE! cohorts during team participation in LEAP. ■ Average weight loss for MOVE! cohorts after team participation in LEAP. — Average percentage weight loss for cohorts before, during, and after team participation in LEAP.

TABLE 1 12-month weight loss, pre- vs post-LEAP

	Pre-LEAP 5/5/ 15-5/3/16	During LEAP 7/11/ 16-10/31/16	Post-LEAP 11/22/16-4/30/19	<i>P</i> -value: Pre- vs post-LEAP*
Cohorts (N)	11	4	21	
Patients (N)	214	67	365	
Patients per cohort	19.5	16.8	17.4	
Weight change (lbs.); mean (SD)	−6.75 (9.93)	−9.00 (9.08)	−9.69 (10.45)	0.001
Weight change (%); mean (SD)	−2.76 (4.12)	−3.66 (3.60)	−3.80 (4.10)	0.003

**P*-values derived from adjusted linear regression models regressing weight change on baseline weight, LEAP-timing (pre-post), and cohort as random effects.

(Study) the effects of their change, and act on what they learned (a PDSA cycle; see Supporting information Appendix A).

The first step was to form a multi-disciplinary team, which occurred during the first four weeks of LEAP. The MOVE! program clinicians were intentional in their decision to include people on their improvement team who were not directly involved with the MOVE! program. These individuals were neutral observers with fresh perspectives, who were able to offer feedback on the MOVE! program. Team members shared a vision of incorporating Whole Health concepts throughout the medical center, including the MOVE! program, and worked collaboratively across professional and programmatic lines to do so. Working together in this way bolstered collegiality. As one team member noted, “We’ve gone beyond our silos.” Veteran patient participation on multi-disciplinary LEAP teams is strongly encouraged, but not required. While Veteran patients were not included on the Asheville LEAP team, Veteran patient feedback was elicited by the Asheville team via post-program participation surveys (data not presented in this manuscript) as a balancing measure, that is, to ensure changes did not negatively affect patient satisfaction.

The team began their work by reviewing MOVE! program data (initiated with their coach in Week 3) to better understand their current state related to patient reach, retention, and clinical outcomes. In the following weeks, the team brainstormed ideas and prioritized them, and did a fishbone diagram to explore potential barriers. Based on their insights from these exercises, the team developed a Project Charter step-by-step with their coach (Supporting information Appendix A) and completed the first four sections by Week 7, culminating with their aim statement. They detailed their overarching goal based on review of their data and desire to incorporate Whole Health concepts:

What are we trying to accomplish?

Our primary goal is to explicitly identify a way for Veterans to connect their weight loss goals to their values and life aspirations that will enhance motivation and treatment outcomes. Generate a discussion that allows them to explore the drive behind wanting to lose weight.

Knowledge gained through their Whole Health training provided the basis for their project rationale within the Project Charter:

Reason for the effort

It is our expectation that as patients' drive behind their desire to lose weight is at the forefront of their minds, that adherence to self-management goals is improved, leading to greater and/or more sustained weight loss. It is also important that Veterans focus on improving quality of life and functionality, above and beyond the absolute number of pounds they wish to lose.

The next step was to describe anticipated outcomes and benefits of a series of planned and focused improvement efforts:

Expected outcomes/benefits

We expect that in introducing Whole Health Coaching consistently to MOVE! program, that the average number of pounds lost per cycle will be greater than previous 16-week cohorts prior to implementing LEAP change. We also expect that the number of patients who reach 5% weight loss goals will also be greater.

Next, the team crafted a specific aim statement for their first PDSA cycle that included an explicit measure and degree of improvement in that measure, who would benefit from the improvement, and the timeline:

Aim statement

We aim for 90% of Veterans enrolled in 16-week MOVE! program to complete their Whole Health Scorecard at session 1. We will test this change with the next new 16-week MOVE! cohort that starts 8/23/16 through the first 10 weeks of the program ending 10/25/16 and compare outcomes to the 16-week MOVE! group that started 8/25/15. Weight outcomes will be compared between the 2015 and 2016 August MOVE! groups through the first 10 weeks of the program to compile and provide results as part of LEAP project. Ideally, we would like to use 16-weeks (complete MOVE! cohort duration).

The team developed process maps of workflows, completed a data collection worksheet, and developed the remaining sections of their Project Charter. The team established a data collection plan and tracked data on their process measure (handing out the scorecards), outcome measure (weight), and balancing measure (patient satisfaction). The team defined their desired outcome measures:

How do we know that a change is an improvement?

Our primary outcomes will be (a) average of pounds lost through the first 10 weeks of the program and (b) the number of patients who reach 5% weight loss threshold in the first 10 weeks.

The team designed a Whole Health-based scorecard (Supporting information Appendix B) in part, inspired by the Aspiring for Lifelong Health (ASPIRE-VA) trial that would allow participants to track their weight loss progress and their specific reasons for wanting to lose weight.⁴⁰⁻⁴³ The front of the scorecard was designed to be consistent with the VA model for Whole Health Coaching (explore mission, aspiration, purpose, and link to weight loss). The back of the scorecard was designed to capture goal setting using specific, measurable, achievable, realistic, timely (SMART) goals, a fundamental component of evidence-based Motivational Interviewing, a patient-centered behavior-change approach aligned with Whole Health principles.⁴⁴ The scorecard was designed using a person-centered approach to keep the big picture at the forefront for participants, a hallmark of patient-centered Whole Health and Motivational Interviewing.⁴⁴ They theorized that strengthening the link between weight and life goals would help motivate patients to lose weight. The inspiration for the scorecard was the notion that, "If you aren't keeping score, nothing will happen. If you aren't keeping score, nothing matters." The team felt that if patients monitored their progress, or lack thereof, they would be better able to make and sustain needed changes. The scorecard enabled patients to actively track their goals.

What changes can we make that will lead to improvement?

Develop a Whole Health Scorecard. Educate the other members of the MOVE! team on the process for Whole Health Scorecard implementation.

The team anticipated potential barriers to the initial cycle of change. Anticipating barriers helps teams be strategic in their attempts to minimize, bypass, or overcome them.

What are the constraints and barriers to success?

- (a) On the days that Physical Therapy (PT) leads the MOVE! session, we will have to conduct both the Whole Health Scorecard check-in and check-out processes at end of the session given PT's schedule;
- (b) We have two weeks to finish developing the Whole Health Scorecard and then send it to duplication; and
- (c) We need to transition the new MOVE! Coordinator.

The team exceeded their initial Aim: 100% of participants received and completed their Whole Health Scorecard in the first session of MOVE! and continued to use their scorecards over the course

of the next 9 weeks of MOVE! with 94.6% of participants rating themselves as “goal met” or “goal partially met.” The team felt that achieving weight loss is about self-monitoring and positive progress vs perfect goal achievement from week to week; therefore, the team regarded “goal met” and “goal partially met” as positive progress. The team sought to reinforce positive change and use that as an opportunity to invite patients to explore their strengths that enabled positive behavioral modifications. Goal achievement (partial or complete) allowed patients to build confidence in their ability to make change and help ensure subsequent goals were realistic. Patients may gain insight about their prior “partially met” goals as being too ambitious. Thus, they may choose to calibrate their next goal accordingly. The sharing of scorecard information in a group setting helped facilitate collaborative discussions between group members, gain clarity in individual goals and build group cohesion. Weight loss increased dramatically during the team's participation in LEAP. Post-LEAP weight losses were less dramatic, but still significantly improved from the pre-LEAP period (See Figure 1; Table 1). The team administers a program satisfaction questionnaire at the end of MOVE!. Scores for overall satisfaction and whether participants would recommend the program to others consistently averaged 9.5 on a 10-point scale. When asked what participants found most helpful about the MOVE! program, many described their appreciation for the accountability they experienced and for the goal-setting process. After LEAP ended, the team continued to optimize the Whole Health Scorecard (Supporting information Appendix C). One modification was to add individual weight graphs at weekly weigh-ins to help participants “own” their progress and make goal-setting more manageable.

Use of the Whole Health Scorecards continued as a routine part of their MOVE! program long after participation in LEAP. The team continued to build on their overarching improvement goal to help Veterans “...connect their weight loss goals to their values and life aspirations [to]...enhance motivation and treatment outcomes.” Table 2 shows additional cycles of improvement completed after participation in LEAP. The MOVE! team identified problems and decided on solutions based on experiences with and input from their patients. Every change was accomplished within the patient-centered Whole Health paradigm of care. For example, the team added a Circle of Health and a Whole Health Brief Personal Health Inventory to the curriculum to further aid patients in setting personalized goals and to help connect those goals with weight loss goals. These tools were developed by the VA's National Office of Patient Centered Care and Cultural Transformation.^{30,45} The Circle of Health helps patients consider all aspects in their life that contribute to a sense of well-being and how they can set goals not just for their health, but for other facets of their life as well. The Brief Personal Health Inventory asks patients to rate themselves on eight domains (Moving the Body, Surroundings, Personal Development, Food and Drink, Recharge, Spirit and Soul, Power of the Mind, and Family, Friends and Co-workers) using a scale from one (“Miserable”) to five (“Great”) and to set a rating indicating where they ultimately want to be on each domain.

As the team progressed in their improvement efforts, MOVE! outcomes continued to improve. Especially, gratifying was how the

team's efforts were increasingly recognized within their facility, especially, by leaders. In June 2017, the MOVE! Coordinator was able to increase her clinical time to 100% in her MOVE! Coordinator role from 70%. Additionally, a clinical pharmacist (PharmD) was added to the MOVE! team (5%) to support use of weight-loss medications. A Physical Therapy Assistant (10%) was also added to the team to incorporate physical activity into more sessions. While the physical activity portions of the MOVE! curriculum are specifically designed to be delivered by a range of professionals, the Asheville team chose to increase the interdisciplinary delivery of MOVE! by adding Physical Therapy to their team. In December 2018, a Dietitian Technician (who was also a Veteran) joined the MOVE! team (40%) to assist with scheduling and patient weigh-ins. The increase in staffing for MOVE! was at least in part, because of their continuous QI work and their ability to communicate their successes to leaders.

4 | DISCUSSION

Participation in the LEAP QI learning program launched this interdisciplinary team into continuous cycles of learning and program optimization over a 4-year period. The LEAP program taught the team the fundamentals of QI and helped build their confidence in their ability to make small, but meaningful changes for 29 months after LEAP. The team's goal, to more deeply integrate principles and approaches related to a Whole Health treatment approach, continued long after participating in LEAP by using PDSA cycles of improvement. The team continued to make adaptations to their original PDSA cycle based on ongoing customer analysis. The LEAP approach to QI embraces small incremental changes where clinician experiences working with patients are integral to identifying opportunities for improvement, potential solutions, testing those solutions, and reflecting on the outcomes. The changes listed in Table 2 (and described in Results) are based on the team's experiences working directly with patients; success or failure of each PDSA cycle was centered on and intimately informed by patients throughout. Changes continued to be made to achieve their overarching goal of connecting a patient's weight loss goals with their values and life aspirations to increase motivation and weight loss. As one team member noted, “Whole Health is in the fabric of MOVE! in Asheville now” leading to more weight loss for their patients. The team has demonstrated continual learning through QI cycles of change. It is interesting to note that there were staffing changes soon after this team's participation in LEAP. A new Registered Dietitian (AT) did not go through formal LEAP training yet facilitated incremental changes with guidance from the rest of the team, demonstrating the durability of the LEAP training even with turnover. This multidisciplinary team's ongoing approach to improvement is a nascent indication of the kind of culture change needed to become a learning health system.

This case study underscores the importance of leaders investing in and building on the enthusiasm and commitment of those on the frontline who are dedicated to making improvements in the face of significant organizational barriers. There is a natural tension at the

TABLE 2 Summary of additional improvement cycles

Problem	Solution tested	Result
Veterans were not setting specific, measurable, action-oriented, realistic, time-based goals (SMART) resulting in inadequate accountability	A template to help walk Veterans through setting SMART goals was added to the back side of the scorecard. Veterans shared their personal SMART goals verbally in each group session. At the start of the following session, each participant reflected on their ability to meet their goal (fully, partially, not at all) with the group	100% of Veterans set SMART goals at the end of each session as goal setting and goal review became part of the program curriculum and structure. Verbal sharing of SMART goals provided MOVE! program facilitators an opportunity to help strengthen each Veteran's confidence to achieve their stated goal. During check-in the following week, progress towards previously set goals was reviewed and barriers can be explored if goals were not met. If goals were met, MOVE! program facilitators had an opportunity to expand on successful behavior changes and/or reflect on positive outcomes resulting from goal attainment
Weight loss medications were prescribed by primary-care providers who lacked training in weight loss medications, leading many providers to avoid prescribing medications	A Clinical Pharmacist was added to the MOVE! team to work directly with Veterans to describe available medications, review the electronic health records of interested Veterans and, when appropriate, prescribe and monitor use of weight loss medications	Weight loss medication prescriptions increased from an average of 2 per year to an average of 16 per year, following the addition of the Clinical Pharmacist. Weight loss medication prescriptions were tracked and evaluated by the pharmacist. Primary-care providers reported satisfaction with the new process
A key aspect of motivation in weight-management involves the measurement of "non-scale victories" resulting from improvements in health and wellness behaviors that go beyond exclusively focusing on number of pounds lost. Our program lacked a formal process to support Veterans in identifying non-scale victories	The Whole Health Scorecard was expanded to include a list of non-scale victories: increased energy, reduced medications, improved blood pressure, improved blood sugar, clothes fit better, increased endurance, improved mood, healthier cooking and shopping, and reduced pain	At the end of each month, participants were asked to identify non-scale victories they experienced since starting the MOVE! program. Veterans reported increased motivation to continue their weight-loss behavior changes based on their review of the non-scale victories they experienced
Veterans needed to be better prepared as they transitioned into ongoing self-care after completing the MOVE! program	The Circle of Health and the Brief Personal Health Inventory tools developed by the VA's National Office of Patient Centered Care and Cultural Transformation were incorporated into the MOVE! curriculum	The Circle of Health and the Brief Personal Health Inventory enabled Veterans to identify areas of self-care that would benefit from further support and focus. During the final MOVE! class, Veterans were offered the opportunity to register for a wellness program tailored to the area(s) of self-care they identified as needing more support or to enroll in individual Whole Health coaching, resulting in improved care coordination following MOVE! graduation

frontline between time-consuming, highly technical, and often infeasible assessments of the scientific literature and engaging teams who are experts in their own context.⁴⁶ Oftentimes, teams must test changes in their local setting, even in the absence of research evidence, to see what leads to improvement.⁴⁷ This team shows what can happen when an interdisciplinary team is invigorated by meaningful change; a positive reinforcing cycle begins and provides the fuel for future improvement efforts. This positive reinforcement can lead to lower burnout and higher job satisfaction^{48,49} and sustained engagement in continuous QI.^{3,50,51} The team had initial medical center leadership support but even more importantly, experienced increased visibility across the medical center among both leaders and peers, despite a lack of dedicated time for QI work. The MOVE! Program was more robust with more staffing an expanded number of disciplines working together. The increase in staffing was remarkable in the face of constrained resources. The team was focused on

implementing a new system initiative that had an evidence base (Whole Health) and weight is a metric documented as a part of clinical care, thus easy to assess as part of the process. As evidenced by the increased weight loss in the post-LEAP cohorts, it's clear that this team made an impact. To provide context for weight loss among Veterans, it is important to note that many Veterans are on a weight-gain trajectory prior to participation in obesity treatment.⁵²⁻⁵⁴ Weight loss across MOVE! programs nationally within VHA has ranged from .13 to 3.3 kg average weight loss at 12 months⁵⁵; this team's MOVE! program was at the high end of this range pre-LEAP (6.75 lbs.; 3.07 kg) but shifted above this range through the approximately 29-month post-LEAP period (9.69 lbs.; 4.4 kg). The increase in average weight loss for cohorts from pre- to post-LEAP (2.94 lbs.; 1.04% absolute change) is potentially clinically meaningful⁵⁶ and represents a relative 43.56% improvement in weight loss in pounds compared to the pre-LEAP mean of 6.75 lbs. .

The team is methodical in their approach, they share high-level goals, and can see positive outcomes that keep them motivated, which is a driver for continuing, sustaining, and spreading improvements. They use evidence from each of their PDSA cycles of change to inform more changes and take time to systematically reflect about the reasons they believe those changes might result in improvements (ie, they develop explicit theories of change). These “theories of change” are a key driver for successful cycles of learning—either those theories achieve predicted outcomes, or they do not.⁵⁷ This team provides an example of a learning mindset.⁵⁸ The team learns from their experiences and uses those experiences to plan subsequent cycles.⁵⁷ This team treated each improvement cycle as a learning opportunity and used their new-found knowledge to inform plans for future improvements.

This case study does have limitations. This is a pre-post analysis of one team's engagement in QI without a comparison. The pathway between implemented improvements and patient outcomes is a function of multiple levels of input, for example, patient efforts to change, high-level policy changes. Nonetheless, this case serves to illustrate the feasibility of multi-disciplinary teams collaborating to plan, test, and implement improvements. Not measured, but nonetheless, a key benefit is the qualitative satisfaction and pride team members feel about their work. Another limitation is the absence of a cost-effectiveness analyses that considers both the budgeted and unreimbursed personnel time related to LEAP participation. Finally, we did not explore the possible inverse correlation between the number of patients in each cohort and average weight loss nor the potential effect of the change in MOVE! facilitators shortly after the completion of LEAP. However, improvements in weight loss compared to pre-LEAP remained during the 29-month tenure of the new MOVE! facilitator.

This case study illustrates the value of an interdisciplinary approach to data-driven program improvement that is designed and conducted by frontline providers and staff. We conclude that it is feasible for frontline teams to engage in the conceptual and operational learning integral to continuous QI, a key tenet of the learning health system. This team's experiences during and after participating in the LEAP QI learning program provide inspiration for what is possible. Engaging frontline teams and individuals in continuous QI is challenging. The most common barrier for teams is lack of time.^{11,21,59-61} In fact, based on pilot team input, the LEAP curriculum was streamlined by reducing the number of tools and written and video guidance. Even with time constraints, when teams coalesce and feel they are a part of something larger, big things can happen.^{59,60} There is no magic solution for moving into this space, but the LEAP program, designed to increase capability of teams to use QI methods within busy clinical settings, has helped launch this team into a new and satisfying way of working.

AUTHOR CONTRIBUTIONS

Amy Thompto and Elizabeth Lima collected the data. Claire Robinson and Laura Damschroder wrote the first draft with contributions from Amy Thompto and Elizabeth Lima. All authors reviewed and commented on subsequent drafts of the manuscript.

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CONFLICT OF INTEREST

All authors report that they have no conflicts of interest to report.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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