

Visual Management Board Implementation to Enhance High Reliability at a Large VA Health Care System

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Background: The US Department of Veterans Affairs (VA) is committed to embodying principles of high reliability organizations and Lean management culture. The practice of making problems readily known to team members and leadership is called visual management, an important tool in the journey to becoming a high reliability organization. Visual management boards (VMBs), or huddle boards, can foster transparency, teamwork, and employee empowerment.

Observations: A variety of health care teams at the Lieutenant Colonel Charles S. Kettles VA Medical Center within the VA Ann Arbor Healthcare System (VAAAHS) created and instituted VMBs. This article highlights the implementation in a large, diverse outpatient cardiology clinic. The incorporation of a VMB into

the daily huddle of the outpatient cardiology clinic team led to increased problem identification among staff and leadership and fostered teamwork as issues were addressed. Feedback from teams across the VAAAHS noted how the boards were helpful in prioritizing areas for improvement, fostering teamwork, and increasing staff engagement, empowerment, and satisfaction.

Conclusions: A VMB is a simple, inexpensive, yet potentially powerful tool to bring together diverse health care teams to identify problems in the workplace, engage staff in developing solutions, and enhance communication with leadership. Implementation of VMBs at the VAAAHS may serve as a model for other VA health care systems for the incorporation of visual management into daily workplace culture.

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Fed Pract. 2024;41(8).
Published online August 18.
doi:10.12788/fp.0507

Health care organizations began implementing Lean management and high reliability organization (HRO) principles in the 1990s to improve quality and efficiency by aligning leaders and staff to a shared vision, fostering a culture of continuous improvement, identifying the root causes of complex problems, and engaging front-line staff as drivers of improvement efforts.¹ There are 4 components for establishing a Lean management system: (1) leader standard work; (2) visual management; (3) daily accountability; and (4) discipline to institute the first 3 components.² Leader standard work promotes continuous improvement by setting a standard routine of behaviors, actions, and tools consistently performed by leadership. These include routine and frequent frontline check-ins (ie, Gemba walks) as well as standardization of employee onboarding, training, and evaluations. Visual management refers to the process of making problems and abnormal conditions readily apparent to staff and leadership.³

The US Department of Veterans Affairs (VA) is committed to implementing similar principles of HROs, which focus on error analysis and process improvement to foster a culture of safety, leadership commitment, and staff engagement.^{4,5} Visual management

is an important tool for HROs; it reflects the mindset of promoting transparency, teamwork, and openness.^{6,7}

Visual management boards (VMBs), such as huddle boards, Gemba boards, or visibility walls, are critical tools that can promote daily accountability and the core principles of Lean thinking and HROs.^{1,6,8,9} Accountability is enhanced through frequent real-time, data-driven feedback between staff and leadership. This is often facilitated with a huddle, a structured and disciplined team meeting that provides bidirectional information.¹ Frequently, a VMB is incorporated into the structure and flow of the huddle.

In a literature review of 20 years of implementation of Lean management systems in health care, Winner and colleagues report that while the frequency and duration of huddles vary, they are often united by several characteristics, including the involvement of the unit team, focus on feedback, problem identification and solutions, and central location around a visual board.¹ VMBs most often take the form of a magnetic, dry-erase board located in a hall or conference room central to the work area.¹ In addition to identifying and tracking problems in the place of work, VMBs can also provide a representation of key performance indicators

and metrics, disseminate essential unit information, and acknowledge the work and successes of staff and leaders.^{6,8-12}

This article outlines the commitment of the Lieutenant Colonel Charles S. Kettles VA Medical Center (VAMC) within the VA Ann Arbor Healthcare System (VAAHS) to the HRO principle of visual management. We describe the incorporation of VMBs throughout VAAHS and provide a detailed report of the development and use at a large outpatient subspecialty clinic.

IMPLEMENTATION

The goal of implementing visual management tools at VAAHS was to empower staff members to identify problems and process improvements, enhance teamwork, and improve communication between staff and section leadership. The Systems Redesign and Improvement Program (SR), which supports Veteran Health Administration high reliability initiatives, helped implement VMBs in VAAHS departments. Each board was designed to meet the specialized needs of each respective team and could be a physical board, virtual board, or combination. However, all boards sought to create standardized work and identify department needs.

The VAAHS outpatient cardiology section VMB complemented an existing daily huddle framework. The cardiology section is large and diverse, with 6 subspecialty clinics, and team members who work in multiple locations. The clinic team includes 19 faculty physicians, 14 cardiology fellow physicians, 9 nurse care managers, 13 nurse practitioners, 2 licensed practical nurses, and 5 medical support assistants at both the Lieutenant Colonel Charles S. Kettles VAMC and Toledo, Ohio, community based outpatient clinic. Prior to VMB implementation, a morning huddle with clinic team members led by a cardiology manager was an unstructured group discussion about clinic operations for the day. While the daily huddle had a positive impact on staff orientation to daily goals, it did not fully meet the aims of staff empowerment, problem identification and tracking, and knowledge distribution. The VMB was codeveloped with cardiology and the SR program with these goals in mind.

Cardiology was the first VAAHS outpatient subspecialty clinic to institute a VMB.

FIGURE 1 Outpatient Cardiology Clinic Main Huddle Board

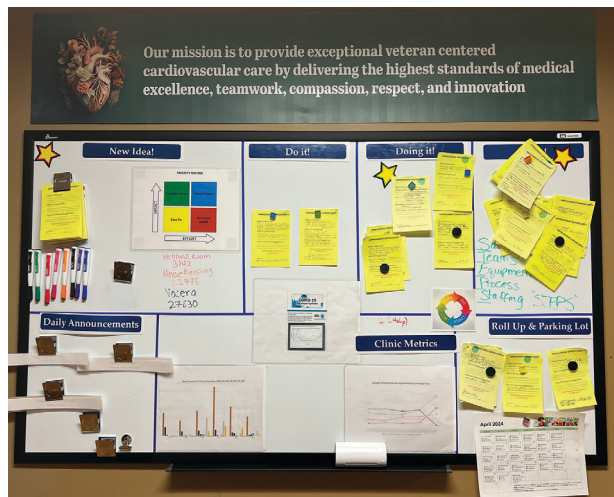
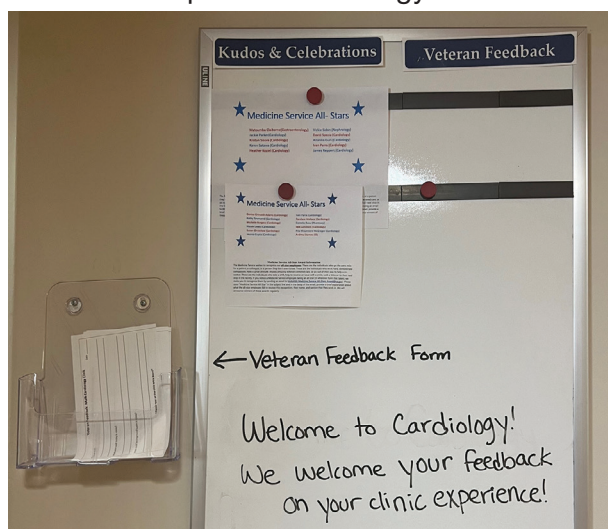


FIGURE 2 Outpatient Cardiology Kudos Board



Two boards were created: a large standard VMB (Figure 1) and a smaller kudos board (Figure 2), which were placed in a central hallway in which staff members and patients pass frequently throughout the day. This location was chosen to promote engagement and promote the VAAHS commitment to continuous improvement. The VMB focused on identifying and tracking problems, information sharing, and metric monitoring. The goal of the smaller kudos board was to highlight staff achievements and provide an opportunity for patient feedback.

The SR program required that the board incorporate problem identification and a uniform VAAHS ticket tracking system.

TABLE Visual Management Board Implementation Feedback

Department	Feedback
Facilities management	“Our visual management board has given my section the dedicated time to zoom out of our day-to-day volatile schedule to think about longer term improvements we want to make.”
Engineering	“The visual management board has given us the ability to break down items in small increments, so we are able to show progress over weeks and months.”
Pharmacy	“Our virtual management board has streamlined our department leadership meetings and provides a real-time view of the current status of ongoing and upcoming projects.” “The visual management board provides us an opportunity to prioritize and stay focused on areas of improvement. It also engages the frontline caregiver in the process and provides feedback through huddles.”
Emergency department	“Visual management boards have helped the emergency department staff have voices in needed action plans from frontline workers and allows department priorities and process change to be shown in real time.”
Inpatient nursing units	“The visual management board has allowed staff to see that their suggestions make a difference and have created real improvements of the unit.”
Clinical access management services	“The visual management board has given us the ability to come together as a team and work collaboratively to resolve common issues in a mutually agreeable way.”
Clinical nutrition	“Our virtual management board has been a great tool for keeping our team organized and prioritizing tasks, along with highlighting all the projects staff are working on.”

Each department could customize the VMB to fit its needs. Staff members are asked to define a problem, complete a ticket describing the issue, consider possible root causes, and suggest solutions. This approach empowers staff to take ownership, make a problem visible, and identify a solution. The problem is then discussed in group huddles using an Impact and Effort Matrix, a tool focused on categorizing and prioritizing those interventions that require low effort and lead to high impact.¹³

Tickets move along the board as they are addressed using a Plan-Do-Study-Act problem-solving model.¹⁴ Plan involves identifying and assigning leadership for the problem and understanding its root causes. Do involves implementing an action plan. Study involves evaluating the results. Finally, Act involves determining whether the plan was successful, and if so, standardizing the improvement and using it regularly.¹⁴ Complicated projects that require higher effort or additional resources are moved to the roll-up and parking lot, so they may be addressed by leadership at an appropriate time. Roll up is the escalation of process improvement tickets that frontline staff are unable to resolve with their current resources. The parking lot is for tickets that staff want to

address later based on priority determined using an impact vs effort matrix. This allows for enhanced bidirectional communication between the department and high-level leadership, showing a commitment to HRO principles at all levels. The cardiology department customized its board to include essential clinic information, such as faculty staffing for the clinic that day and clinic metric information (eg, patient satisfaction scores, and appointment wait times). The kudos board, a space for patient feedback and to celebrate staff accomplishments, was located across the hall closest to the waiting area.

After the VMB was implemented as a new component to the daily team huddle, the group discussion physically moved to just in front of the board; pertinent clinic information is discussed daily, and the ticketing system is discussed 1 to 3 times per week, depending on ticket progress. Open and unresolved tickets are reviewed for updates on the status by the responsible team member, who receives ongoing feedback and assistance.

Program Impact

A total of 55 improvement opportunity tickets were submitted by staff members during the initial 23 months after the implementation of the outpatient cardiology clinic

VMB. Most were submitted by nurse practitioners, although there were contributions from all faculty and staff. The high percentage of ticket submissions by nurse practitioners may be related to their full-time daily presence in the clinic, whereas some other staff members are part-time (most physicians are present 1 day each week). Improvement opportunities were noted within a variety of areas, including clinic facilities (eg, clinic equipment), communication between the clinic and patients (eg, telephone calls from patients or appointment letters), and patient care (eg, medication reconciliation and laboratory requisition).

In an improvement opportunity ticket, a staff member identified that the low seating in the patient waiting area was a fall risk and not diversified for varying body types. They posted a ticket, and the issue was discussed as a group. This staff member assumed ownership of the problem and placed an interior design request for taller chairs and bariatric options. The ticket was resolved when the waiting area was upgraded to include safer and more inclusive seating options for patients. Of 55 tickets submitted by staff as of June 2024, 45 have identified solutions, 4 are in process, and 6 have been placed in the parking lot. On average, the morning huddle spends about 5 to 10 minutes addressing tickets, but on occasion, more complex topics require additional time. The kudos board receives feedback from patients who express their gratitude, and serves as a space to celebrate awards received by staff members.

Implementing a VMB into daily huddles within the cardiology clinic led to increased staff engagement and ownership of challenges, as well as improved communication between frontline workers and leadership. VMBs have proven to be useful for annual staff performance evaluations because staff members who engaged in the board and volunteered to take accountability for ticket resolution could use those accomplishments in their assessments. Finally, VMBs made quality improvement and safety work accessible by normalizing frequent conversations. This empowered staff to engage in improvement projects and even led some members to enroll in formal Lean training.

The outpatient cardiology clinic VMB at the VAAHS was identified as a best practice

during a site visit by the Promising Practice Team in the Veterans Health Administration Office of Integrated Veteran Care. The outpatient cardiology clinic leadership team, including the authors of this article, was invited to present our visual management work as a main topic at the January 2024 Office of Integrated Veteran Care collaborative meeting.

Further Implementation

The SR program has collaborated with additional VAAHS teams to implement VMBs. Forty-four physical VMBs and 20 virtual VMBs are currently in use throughout the VAAHS. Virtual VMB content is similar to a physical board and can be modified by each team to meet its particular needs. Several virtual VMBs have been implemented at the VAAHS and can achieve the same goals of staff teamwork, empowerment, and engagement. Each team can choose the format of the VMB that best fits their needs, which may be partially influenced by the team's overall interaction style (on-site teams may function better with a physical VMB, and off-site teams may find a virtual VMB works best). VMBs have been implemented in various work areas, including laboratories, inpatient wards, subspecialty outpatient clinics, procedural areas, and the engineering department. In fiscal year 2024, 180 tickets were electronically submitted by teams across the VAAHS, of which 170 identified solutions and were marked completed. Ticket counts may be underestimated since not all physical board tickets are reported in the electronic system. The SR program periodically attends morning huddles of various teams and obtains feedback on their VMBs, a practice that highlights its contribution to staff engagement, transparency, teamwork, and continuous improvement (Table). A goal of the SR program is to identify areas of the VAAHS in which VMBs would add value to the team and implement them as necessary.

DISCUSSION

VMBs are common in health care and are implemented to promote the core principles of Lean thinking and HROs, including visual management and daily accountability. The goals of a visual management tool are to make problems visible and document their management. A VMB can serve as a

focal point for team discussion and a physical space to track each problem through its initial identification, understanding of root causes, consideration of potential solutions, and recording of intervention results.

A VMB can foster a culture of safety, leadership commitment, and continuous process improvement when designed and implemented to reflect team needs. VMBs can empower staff members to share work concerns and openly promote engagement. As a central place for discussion between staff and leaders, VMBs can also foster teamwork and communication. The daily huddle provides a safe, productive working environment by ensuring that lines of communication are open among all team members, regardless of role or leadership designation.

Limitations

This article focused on the implementation of 1 type of visual management tool. It provides an in-depth discussion of the development, implementation, and experience with a VMB at multiple clinics of a single section in 1 health care system. These reported experiences may not represent other VA facilities. Perceptions of the impact and usefulness of the VMB were mostly anecdotal. Further evaluation of the VMB implementation experience and utility at other VA health care systems would provide additional insight into the optimal implementation of VMBs.

CONCLUSIONS

Through increased transparency, empowerment, and communication, VMBs are an important tool in the visual management tool belt for organizations committed to HROs and Lean management. Given the successful institution of VMBs at the VAAAHS, the description of our experience may aid other VA systems for the incorporation of visual management into the daily culture of their respective health care teams.

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Scott Hummel has received research grants from the

National Institutes of Health, US Department of Veterans Affairs, and the American Heart Association, and is a site principal/coinvestigator for Alleviant Medical, Axon Therapeutics, Corvia Medical, and Novo Nordisk. The other authors report no actual or potential conflicts of interest or outside sources of funding with regard to this article.

Disclaimer

The opinions expressed herein are those of the authors and do not necessarily reflect those of *Federal Practitioner*, Frontline Medical Communications Inc., the US Government, or any of its agencies.

Ethics and consent

This project did not require institutional review board approval.

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