

*Healthcare and Project Management*¹

Patient Care as a Project²

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Abstract

Managing long-term, time-sensitive, complex projects takes extra time and effort. These projects pose several challenges to project management, such as the inability to predict timelines, loss of focus and coordination, dwindling team morale, poor diligence, unstable project conditions, and failure to derive a quick value. Patient care delivery is at the core of the healthcare project universe and needs to be considered and handled as a complex project to improve outcomes. Patient care and project management processes can be mapped to each other to conceptualize and visualize to realize the benefits of consummate patient care.

The article is based on the personal experience of the first 22 weeks of the author's recovery from a devastating ankle fracture. It is an excellent example of looking at patient care as a project. By conceptualizing the ankle fracture recovery process as a project, the author compares patients' care management activities to long-term, time-sensitive, and complex projects. In keeping with the format of previous articles in this series, a dialogue between the author and a curious friend is used to explain details and concepts.

Key terms: Patient care; patient-centricity; project management principles; ankle fracture; recovery

Mary*: Good morning, doctor. How are you doing today? How was your week?

Author: Hello, Mary. I have been good and have been busy nursing my injured ankle. Unfortunately, I felt excruciating pain in and around the ankle and had to visit my surgeon. I am on some pain meds and have been advised to take physical therapy.

Mary: Oh really? Are you ok with having a session today? I remember you mentioning the devastating fracture you sustained a few months ago. Your recovery seems to be outstanding. How did you manage that?

¹ Editor's note: This series of articles about project management in healthcare is by Dr. Deepa Bhide, a practicing pediatrician with additional experience in information technology and project management. She has recently experienced healthcare from a patient's perspective while recovering from a broken ankle. In this series, Dr. Bhide reflects on programs, projects and project management in all aspects of healthcare from industry, provider and human patient perspectives. Learn more about Dr. Bhide in her author profile at the end of this article.

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Author: Oh, thank you! We can proceed with our session, and this is an excellent segway to discuss my ankle fracture recovery project.

Introduction

Have you ever had a broken bone?

Have you used project management to recover from a complex medical condition?

They say, "The journey matters most, not the destination." Yet, in my ankle fracture recovery project, there was a compelling need to achieve both: a productive journey and a successful outcome (destination).

In the early hours of the 10th of July 2022, I skidded on a wet surface, sustaining a fracture of my left ankle joint. The pain was excruciating, and I could not bear the weight on the affected leg. X-ray and CT scan performed on the same day showed a trimalleolar (three parts) fracture with extensive destruction of the ankle joint. After the swelling had reduced, my Orthopedic surgeon and his team operated on me on the same day over a five-hour long surgery to restructure the fractured joint by implanting titanium plates, screws, and wires.



Fig 1: Before Surgery (Note the fractured bone) After Surgery (Note the placement of Titanium implants)

A trimalleolar ankle fracture is a three-part fracture of the ankle joint. My fracture was complex, even from the view of the doctors, and had destroyed the ankle joint entirely, making it extremely unstable. I also sustained an injury to the surrounding tendons, ligaments, arteries, and nerves. Weak bones (low bone density), coexisting health conditions, and torsional force that caused the injury further aggravated the complexity and severity.

I was depressed at the thought of being completely immobilized soon. As a primary caregiver for my mother, my main concern was fulfilling my duties and responsibilities towards her. Would the coexisting low bone mass (osteoporosis) delay the healing? Would my existing low thyroid levels (of hormones secreted in the thyroid gland) cause

an impediment to my recovery? I had a fracture of my right ankle a couple of years ago. Will the right ankle be strong enough to bear my entire weight, as the left leg would be in a cast with no weight bearing? The thoughts gripped my mind and triggered immense anxiety.

The fall and subsequent ankle joint fracture triggered a time-sensitive, long-term, and complex recovery project from an ankle fracture. I request you to recall our discussion on the universe of projects in healthcare¹.

Mary: Oh, I am so sorry to hear that. How was your “Golden hour”? I know the Golden hour is the first 60 minutes of a patient’s care as it directly affects the outcome.

Author: Good point. I would call it a “Golden 12-hours”. From the time of the fall to being wheeled in the Operation Theatre (OT), I had to move through multiple stages of care. These stages were handled by personnel with different skills and experience, some with inadequate expertise for the task. The hospital’s healthcare team worked extremely agile on quick decision-making, diagnostic and therapeutic intervention decisions, and light yet critical documentation. A definitive intervention plan allows patients to see the immediate value and develop confidence in the healthcare system.

The goal of the surgery was to stabilize the ankle joint and help speed up the healing process. Before the surgery, my surgeon informed me that he would fix titanium implants (screws, plates, and wires) to restructure my broken joint, and while I could expect a full weight-bearing by 8 to 10 weeks, a full recovery would take over a year. The surgical team followed evidence-based-medical principles in fixing the joint. Enhanced Recovery After Surgery (ERAS) society has created a perioperative care (which includes preoperative, intraoperative, and postoperative treatments) pathway to achieve early recovery for patients undergoing major surgery. Although there are no guidelines for trimalleolar ankle fractures, the surgical team referenced the guidelines for major surgery.

When the project is initiated, specifically with this type of project^{1,7} (patient care project, healthcare emergencies, vaccines or drug manufacturing for a pandemic, etc.), the project manager must know the sequence of activities of immediate value. Any delay can be detrimental to the project's ultimate value. It could be possible to have "less than adequate skilled resources" who may be at the frontline at the project's initiation. Reasons for such a frontline could be various. For example, one could not source or train the right resources for the necessary expertise. We have talked about this in our discussion on project shortages².

Regardless, the project needed to get started immediately with complete quality assurance.

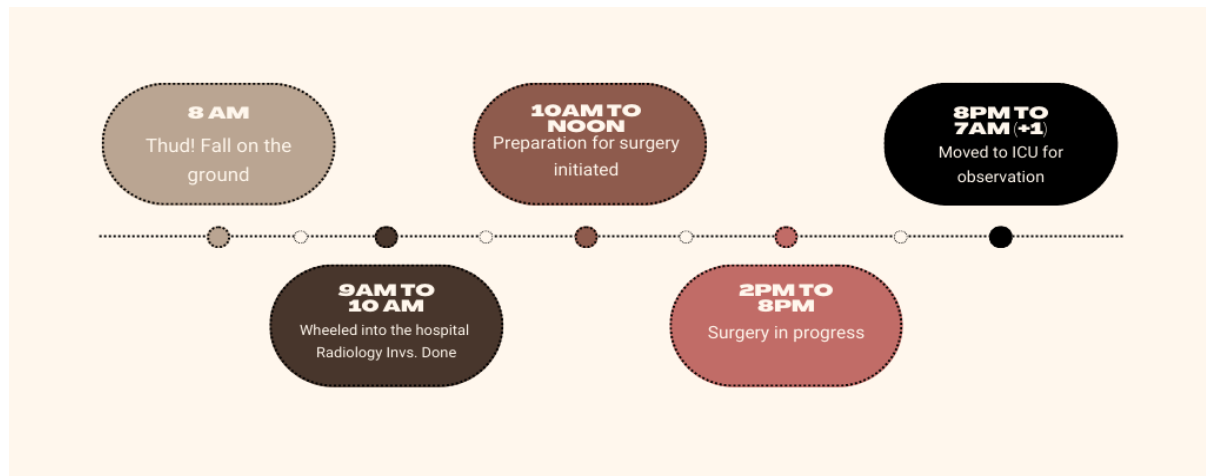


Fig 2: “The Golden 12 hours - Timeline on the day of fall. Team agility and quick commencement of definitive treatment-surgery

Mary: I can see now. You had a successful “Golden 12 hours” where your bones were fixed. How did you move forward with your recovery?

Author: Absolutely. The “Golden 12 hours” did impact my eventual recovery positively. I was depressed for the first two days. On the third day after surgery, I collected myself and started planning the recovery process with my team. We need to approach long-term projects differently due to their drastically altered timelines. My ankle fracture recovery was a long-term complex project.

The only goal was an effective treatment to achieve a normal joint state from an anatomical and physiological standpoint. The supporting goals were systematic follow-up and assessment tailored to clinical severity, information, and support for self-management and care coordination across settings. To track the recovery process methodically, the team created a detailed phase-wise (surgical procedure, transition to home care, and return to normalcy) activity list that dotted my recovery care plan.

We decomposed the long-term project into a work breakdown structure and two phases for easy execution and tracking. The planning process was comprehensive and included all stakeholders. We wanted to leverage the team’s skillsets, build consensus and create a plan with buy-in from all parties involved.

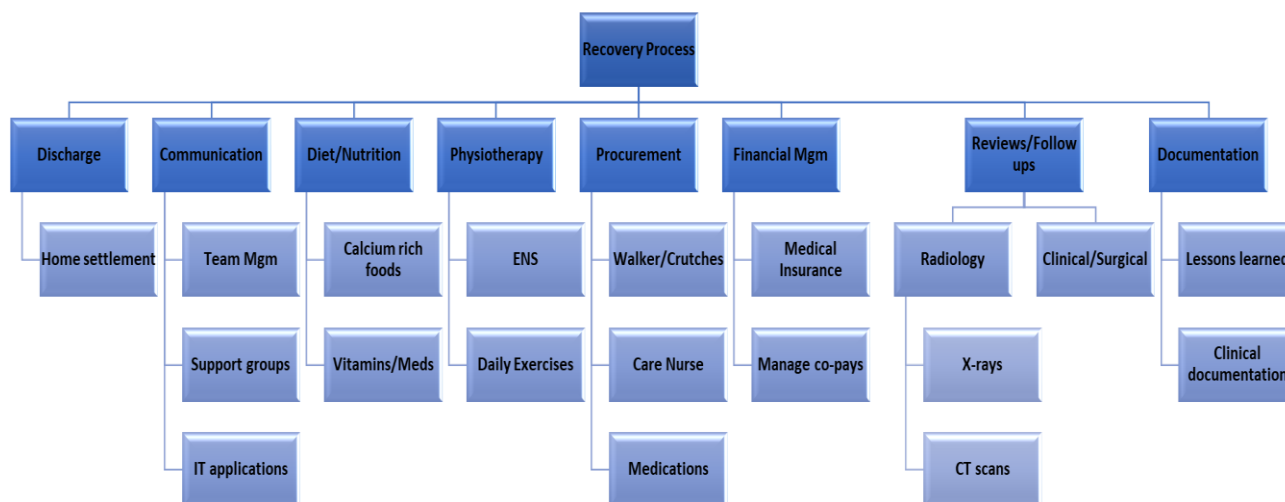


Fig 3: Work Breakdown Structure (Indicative) of the Ankle Recovery Project

While planning the recovery process. Understanding this project's complexity, uncertainty, and risks was critical. It was like executing in a VUCA (volatility, uncertainty, complexity, and ambiguity) environment. The scope of complete recovery included normal mobility, normal range of movement (ROM) of the joint, no residual joint incongruity radiologically, regular physical and psychological health, and the ability to do activities of daily living (ADLs) independently. Deriving this value was the ultimate indicator of the success of the surgical and recovery process. However, the team must be prepared for surprises knowing the human body can throw surprises!

Risks included medical conditions such as osteoporosis, fracture non-healing, non-alignment, implant rejection, wound complications, psychological states of depression, and non-compliance to treatment. Therefore, it was essential to plan for a care continuum to prevent these risks from threatening the objective and minimize the long-term sequelae such as limp and arthritis of the ankle joint.

Financial planning for recovery was another critical factor. For example, I had to plan to procure a walker, a contoured cushion for the foot to rest, crutches, a dedicated full-time caregiver, and so on. So there would be a double whammy of loss of income added to the high insurance payment for the surgery and treatment.

Mary: I am sure the elaborate planning helped in your execution of the process. What did the quality parameters look like?

Author: The quality, in my case, was the quality of the recovery process. A 100% quality (clinical and nursing care, desired outcomes, and consistency with evolving clinical practices) had to be ensured in clinical, mobility-related, radiological, and psychological parameters.

Planning with consensus from the entire team was critical for successful execution. There were too many things to take care of during execution. Everything seemed like a mess! Hence, strategizing and prioritizing were important. As per Pareto's 80:20 rule, the team started to dig into the activities on the critical path that would be important. We ensured effectivity and focus on incremental value (e.g., ability to dress by myself, ability to walk to the restroom, etc.) of recovery experience – the quick wins! Keeping in mind the long-term nature of the project, immediate value realization was necessary.

Mary: This was a complex project, and I am sure you needed a team with the right skill sets to execute it. How did you manage that? Were there any challenges in managing the team? What role did you play in this project?

Author: Yes. The team comprised skilled resources from clinical, para-clinical, home care, and project management groups. We leveraged the team's diverse skills, knowledge, and experience to work toward the shared goal of my recovery. We planned celebrations and patted our backs on achieving milestones to stay motivated during this long-term recovery. The "Skill, Hill, Will" matrix helped us to determine the root cause of a particular performance challenge of a team member and pre-empt it. To do that, first and foremost, the team adopted psychological safety as ground rules. This eased the discussion of fears and concerns of each one of us openly and fostered inclusivity. Facilitating communication, problem-solving, and consensus-building processes throughout the recovery process, teams underwent a learning process rehearsing and upgrading their dormant skills and learning new skills. Technology enabled real-time sharing of recovery status to facilitate changes, if any, in mobility/treatment plans. The team was curious and excited to see the recovery process unfold with time.

I wore many hats in this project. My roles included patient, sponsor, team member, project manager, and steward. Isn't that interesting? Each role had an individual responsibility; sometimes, it was overwhelming. Of these various roles, one of the project managers was quite demanding. I realized the importance of soft skills³ such as communication, strategic thinking, and collaborative leadership.

Though I must admit that managing stakeholders (a team of highly skilled resources) was anything but easy, as a project manager, I knew how critical it was to collaborate. While we all had one goal in mind, the nature of work, workflows, and engagement levels of different stakeholders differed. Every stage of recovery posed unique challenges for the team. Early in the project, I created a stakeholder mapping with critical factors such as interest in the project, power, level of influence, needs, concerns, and so on. This helped me work through the complex maze of stakeholder management.

Mary: It seems like you had efficient team management. I remember our conversation from the last time on how ethics matters in stressful situations that threaten to test your ethical behaviors⁴. Playing the role of both a patient and a project manager must have been challenging.

What parameters did you monitor to track the recovery process? Was monitoring a complex process?

Author: Yes, of course. Honesty, Responsibility, Respect, and Fairness, values of PMI's Ethics and Professional Conduct, governed my behavior and the team's.

We had scheduled performance monitoring through periodic reviews and retrospectives with the surgical team at the end of 4, 10, and 16 weeks with defined goals (clinical, radiological, mobility, and psychological parameters) for each review stamp of time. We chose the timelines based on the expected recovery in the abovementioned parameters. These reviews aimed to detect variances, flag potential delays or recovery failure points, and assess improvement areas for various stakeholders participating in my recovery. Based on the recovery process, incorporating new goals in the plan was not only an exciting activity but a forward-looking one too.

In long-term projects, chasing the goal of utmost value to the client is essential. Achieving independence in ADLs was the first goal on our radar. We planned to fast-track achieving independence in ADL before the scheduled time by increasing the load bearing on the joint and duration of the walker-enabled walk. When we noted a setback, I had my physiotherapist and counselor step in to discuss workarounds and ways of achieving the goal. This timely intervention improved my morale, decreased pain, and steadily increased my ability to bear weight until I exceeded the next goal - a classic example of project recovery! Project recovery is only easy if the right resource takes the proper steps at the right time.

Of the many other parameters from the clinical, mobility-related radiological, and psychological standpoint, a few merit mentioning.

Of the clinical parameters, Range of Movement (ROM) is vital in any joint injury, especially in weight-bearing joints. I had made good progress at the end of the first phase, and the readings were within the desired range.

The team regularly observed and monitored the muscle mass to suggest adequate and appropriate exercises to avoid the risk of muscle wasting (disuse atrophy in medical terms). In addition, we initiated and continued physiotherapy to prevent this complication.

Other clinical parameters were wound healing status, sensorium, and pain and swelling of the affected ankle joint. Regular X-rays and CT scans of the ankle joint showed us the healing of the fracture line on both bones.

As a patient and a key care team member, I needed to be psychologically normal. I learned to extract myself from the pain and keep my mind busy with activities to help me heal. My learnings from this period of immobilization are available at *Broken Ankle and Beyond: Lessons for Life and Project Management*⁵. Managing this project, I also realized that all projects, especially those related to patient care, must be executed above transactional tasks in project management. Project management is about bringing the desired value – value as a caring and empathetic human being. As a part of project

delivery in such projects, the numerous human soul connections go beyond just the transactional issues.

Mary: That's incredible. A very systematic initiation, planning, execution, and monitoring of the project. What about lessons learned? Has your team documented this experience? Also, is the recovery project completed?

Author: Oh yes! Our team maintained a detailed documentation of the clinical events as a knowledge repository for use in the future. We believe the repository will benefit a larger pool of stakeholders such as the general community, hospitals, healthcare organizations such as trauma centers, healthcare providers seeking innovations in the care delivery process, and new patients of similar fractures who wish to know more about the recovery process. In addition, we expect the knowledge repository to serve as a reference for creating training material, webinars, and more.

At the end of phase 1 (16 weeks), my left ankle joint had a near-normal painless range of motion. However, I must wait a year or more for a complete recovery. Therefore, we have scheduled further follow-ups to assess the recovery of phase 2 of the project with plans for advice on sports, travel, and so on.

Mary: How is the role of a project manager different from that of a case manager? I have known case managers who liaise between the patients and physicians handling care coordination of the patient's condition to ensure positive patient outcomes. Were you also a case manager of your care?

Author: That's an excellent point. I agree with you on the role of case managers in the patient care process. Case managers need a plethora of skills to perform their duty, such as assessing patient needs and ensuring a continuum of care for an optimal patient outcome. In addition, envisioning patient care as a project, project management forms one of the core skills that case managers must possess. Therefore, I recommend that case managers take project management training to better prepare for their roles.

Mary: I agree. I am happy your recovery was as expected for the first phase. But, in hindsight, did you look out to know why such a trivial fall resulted in a complicated fracture? Have you given thought to the prevention of such incidents in the future?

Author: Yes. Our team performed a root cause analysis and an action-oriented SWOT exercise⁶. It was interesting to see that wearing incorrect footwear on a rainy day, slippery surfaces due to incessant rains, a preoccupied mind, weak bones, the ankle being a weight-bearing joint, and the fall causing a torsional force were the primary causes of this devastation. I need to work on preventive measures such as improving bone health, using the proper footwear, creating a fall-free infrastructure, and avoiding a preoccupied mind. Our team used FRAX®, a valuable framework to assess fracture risk. We found the framework helpful in planning preventive steps.

Mary: Oh wow! I could never have conceived patient care as a project central to other healthcare projects⁷. I am happy your first phase was smooth sailing. What is your plan for the second phase of the recovery project?

Author: Well, the recovery period was a rollercoaster ride. I can walk independently, albeit with a limp, stiffness, and swelling of my ankle joint. My team and I are happy about the success of this phase. That said, we have noted highs, such as wound healing and partial mobility, to support ADLs, and lows, such as abnormal sensation in the affected foot and swelling in the normal joints due to compensatory movement, dotting this phase.

Dedicated to restoring muscle mass and ROM and returning to normal power and gait, I am looking forward to the second phase.

Mary: What PM methodologies did you use in this project?

Author: The project had shades of both waterfall and agile in different parts of this same phase. For example, the scheduled reviews with my surgeon followed a sequential timeline and are an example of the waterfall approach. In contrast, quick iterations in the physiotherapy schedule and changes to the load-bearing plan followed the agile method suitable for faster feedback and experimentation. But for the most part, as a low-risk tolerance team, with some complex and flexible elements to handle, I'd like to believe we followed a hybrid approach throughout the project. The hybrid model helped us with the integration of activities. We followed a waterfall approach at the project level but an agile approach at the team level. We used extensive tailoring to mix and match the methods to suit the unique requirements of this project. Does that make sense? This could be our next topic of conversation.

Mary: Thank you, doctor. This was such an insightful discussion about your recovery process. Thank you for being open to sharing your experiences with me.

I look forward to our conversation on other project management approaches.

Author: Thank you, Mary. Till then, have a happy weekend.

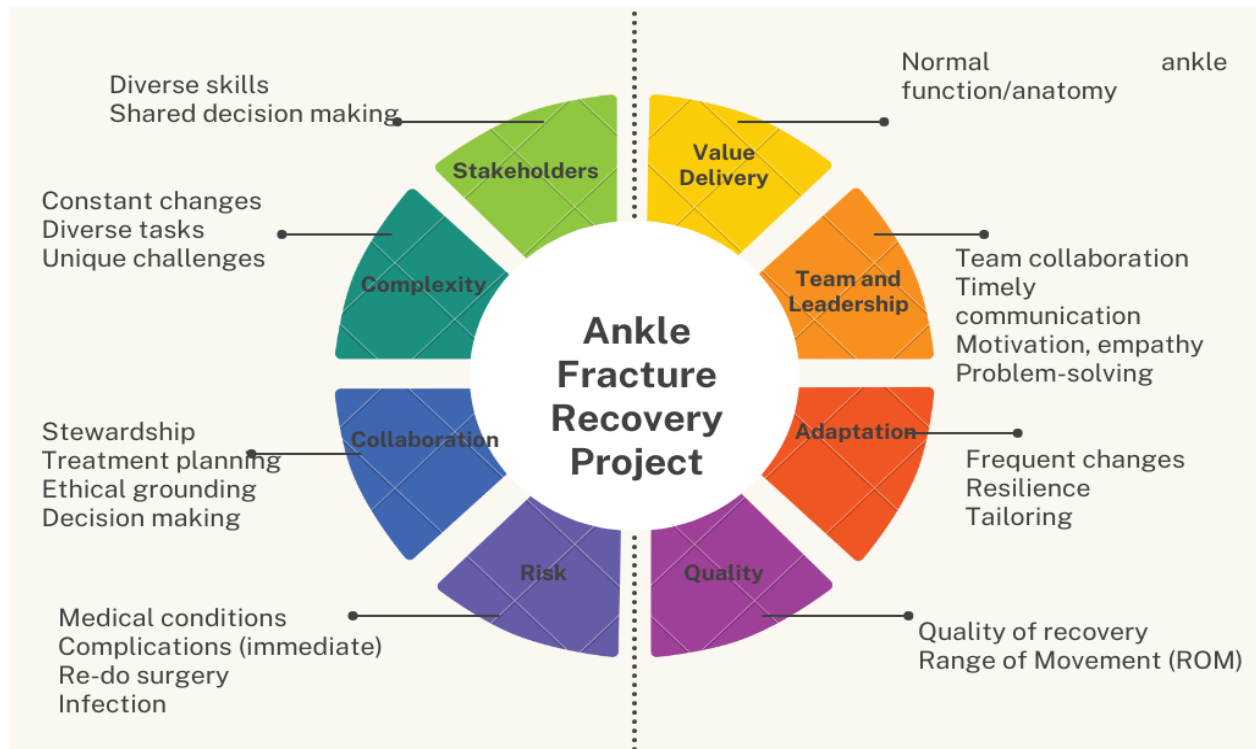


Fig 4: Ankle fracture recovery project mapped to project management principles.

Conclusion

Patient care as a project is a unique concept in the universe of healthcare projects. In medically complex, time-sensitive, and longer-term events such as these, the recovery process could be more challenging than the event itself. The recovery process can test project resilience and the endurance of team morale. Maintaining the project's tempo by focusing on means or approaches with the proper controls is critical to deriving the value of the project. The focus of the recovery process undoubtedly needs to be patient-centric. In the face of numerous stumbling blocks, adequate planning, persistence, and perseverance will help achieve the objective. Remember, DISCIPLINE is the critical success factor!

The following 5 Cs summarize factors to consider driving successful outcomes in complex long-term projects such as patient care.

1. Consultative approach: early and comprehensive consultative program leveraging diverse and unique skillset of the team members
2. Communication: crisp, timely, and disciplined communication using contemporary channels
3. Care continuum: a strategic view of the entire project and planning phased goals such as short-term, medium-term, long term to execute and monitor
4. Continual status review: systematic monitoring of value alignment and value delivery

5. Celebration: team engagement, reward, and recognition to drive team engagement and motivation

Additional Information

FRAX® is a valuable tool developed by the University of Sheffield to aid clinical decision-making about the use of medications in patients with low bone mass. In addition to DXA measurements, the FRAX® model uses risk factors for improved fracture risk estimation. The International Osteoporosis Foundation supports the maintenance and development of FRAX®. More details of FRAX® are available at <https://frax.shef.ac.uk/FRAX/tool.aspx?country=9>.

Enhanced Recovery After Surgery (ERAS) framework represents a new way of looking after patients undergoing major surgery. It is a treatment program of several elements based on the best available medical science that focuses on multi-disciplinary care delivery with active engagement of the team members, including the patient helps a quicker and better recovery from major surgery. More details of ERAS are available at <https://erassociety.org/>.

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* - Name changed to protect privacy

Glossary

ADL: Activities of Daily Living

ERAS: Enhanced Recovery After Surgery

OT: Operation Theatre

PM: Project management

PMBOK®: Project Management Body of Knowledge

PMI: Project Management Institute

ROM: Range of Movement

SWOT: Strength, Weakness, Opportunity, Threat

VUCA: Volatility, Uncertainty, Complexity, and Ambiguity

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Note from the author: This article briefly summarizes the author's ankle fracture recovery process. In addition, the author has created detailed documentation of the project that includes content related to clinical management and project management, figures of techniques used, graphs of measurement metrics, and some practical tools and tips for patient care. This information is expected to help project managers in the healthcare domain, new patients and caregivers, and society at large for knowledge on chronic care management. Please get in touch with the author at deepa.bhide@gmail.com if you want to know more about the project.

About the Author



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Dr. Deepa Bhide, MBBS, DCH, PMP, has over 20 years of professional experience where she has blended medical practice and research with IT and Project Management. She juggles consulting, training, and operations and is proficient in clinical medicine, project management, and healthcare information technology. Starting her career as a medical practitioner, she has worked with varied organizations before her current stint as director and clinical expert for Inventurus Knowledge Solutions.

Deepa's growing interest and work in these areas, born from her day-to-day patient interactions, helped her view Project Management as a backbone of progressive healthcare. Her paper on "Patient Care - A Project Management Perspective" has

received global recognition and acclaim. With a physician background as a solid foundation to leverage IT/PM skills and knowledge, Deepa has blended her broad-based experience and learnings to present a unified, holistic, and wholesome view of Project Management and Healthcare, a cross-domain confluence. Through various webinars, events, talks, and writings across platforms, Deepa has been an evangelist in championing global project management during the Covid-19 pandemic.

A Gold medalist from Osmania University for standing First in the MBBS course, she pursued her DCH in Pediatrics and Child health. Deepa has served a variety of roles in local and global Project Management Institute (PMI) regions. She remains actively engaged with PMI and has been a participant and speaker for various national and global meetings and online events.

Deepa lives in Hyderabad, India, and loves traveling, singing, and experimenting with global cuisine. She can be contacted at deepa.bhide@gmail.com.