

*Healthcare and Project Management*¹

Universe of Project²

Dr. Deepa Bhide, MBBS, DCH, PMP

Abstract

As with any other industry and its varied working methods, healthcare comprises numerous projects aligned with its goals of enhancing health and quality of life. Classification of these projects is vital to understand the similarities and differences. It's important to note the similarities in the component projects and group them to realize benefits from synergy, such as learning, automation, documentation, training, etc. On the other hand, it's also important to note the differences in the types of projects, project initiation, project goals, and project management methodologies to unearth gaps that can, when filled, help with the maturity and growth of this discipline.

In this paper, without a standard classification exclusively for healthcare projects, the author tries to categorize healthcare projects along the lines of healthcare processes and settings. Like any other industry, healthcare has unique dimensions that can influence project success. With details from healthcare, the author also elaborates on aligning the healthcare projects universe to project, program, and portfolio, a concept from the project management framework. Ultimately, the author calls for a standard approach for classifying the healthcare project universe.

Key terms: healthcare industry; projects; programs; classification; benefits

Mary*: Hello, doctor. The healthcare industry overview was very insightful. I so look forward to our continued conversations on this topic. Reflecting on our discussion, I am curious about the universe of healthcare projects. How are these projects conceived, and what is their expanse?

Author: Thanks, Mary. It's a pleasure to talk to you, and I look forward to our discussions. That's a great question. Let's get started.

¹ Editor's note: This is the second in a new series of articles about project management in healthcare 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 will reflect on programs, projects, and project management in various 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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I hope you recall our earlier discussion on the characteristics of healthcare as an industry¹. Classification enables ease of information retrieval when needed. For example, healthcare information technology projects could be related to application development, maintenance, hardware installation, etc., and can be managed in one way. That allows us to plan and use a suitable management approach for the entire group or projects. Our universe is unimaginable and vast, comprising energy and matter. Along the same lines, the universe of healthcare-related projects is boundless, with various projects directly and indirectly related to healthcare. Therefore, each of us is a stakeholder and a part of projects in the healthcare industry. According to PMBOK Guide 6th Edition, a stakeholder is “an individual, group, or organization that may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project, program, or portfolio.” We are influencing the project, or the project is affecting us.

Overview

Researchers and practitioners have felt the need to establish a classification for a universe of projects (current and potential). The Merriam-Webster dictionary defines classification as a “systematic arrangement in groups or categories according to established criteria.” Classification can be identified as a meaningful clustering of experience, turning information into structured knowledge (Kwasnik 1999).

Criteria, such as similar features related to complexity, size, objectives (e.g., strategic, tactical, operational, etc.), project duration, and risks, can be used to group projects. Regardless of the type of classification, it is vital to understand the reasons for classifying projects to understand the purpose and intent of the project. Comprehension of the context or goal of the projects, creating workable frameworks for execution, visualizing gaps for new initiatives/projects, and enabling training and process documentation/education are a few benefits to the stakeholders, such as researchers, academicians, and practitioners.

Mary: This is a good overview of the reasons for classification. How are these different from the project, program, and portfolio management concepts as per established project management standards, for example, PMBOK® Guide – Seventh Edition.

Author: Good question. The following definitions exist according to the PMBOK® Guide – Seventh Edition. The definitions reinforce the need for classification. Let’s look at the definitions and understand an example of each category.

Project: a temporary endeavor to create a unique product, service, or result. A project can stand alone or be a part of the program or a portfolio.

According to the World Health Organization²(WHO), Community-based healthcare services include delivering essential services such as preventing infectious diseases, taking specific measures to protect vulnerable populations, managing health emergencies, and managing chronic conditions to reduce mortality and morbidity. An

indicative list of community health projects is as follows. Unique goals differentiate these projects from each other.

- Community Behavioral and Mental Health Project focused on behavioral health.
- Alcohol De-addiction Project for alcohol de-addiction promotion.
- Adolescent Girls' and Women's Health Project to support healthy and safe "coming of age" for girls during their menarche and women.
- Sickle Cell Disease Project focuses on rehabilitating patients with sickle cell disease, a type of blood disorder.

Program: Related projects, subsidiary programs, and program activities that are managed in a coordinated manner to obtain benefits not available from working them individually.

The projects listed above in the community-based healthcare services can be organized, managed, and tracked as one stream. This can help with benefits such as sharing resources (healthcare professionals, healthcare devices, ambulance, medications, and so on), managing conflicts, increasing work transparency, and managing dependencies (e.g., training of staff, reliance on infrastructure elements, regulations, and compliance conformation, stakeholders, and so on.) These projects can thus live in a Community Health Program.

For example, a list of programs by the Ministry of Health and Family Welfare³, Government of India, is available on their National Health Portal. A few programs from the list are as follows.

- Reproductive, Maternal, Neonatal, Child, and Adolescent Health focuses on the health of mothers and children from day one to adolescents.
- National Nutritional Programs focused on reducing undernutrition, enhancing the community's nutritional status, and preventing and treating nutritional disorders.
- Non-communicable diseases (e.g., cardiovascular diseases such as heart attacks and other medical conditions such as diabetes mellitus, cancers, chronic respiratory diseases, and so on) programs focus on reducing risk factors and effectively treating these conditions to facilitate a good quality of life.
- Health system strengthening programs focus on training the ancillary healthcare workforce, enabling funding for healthcare activities and establishments, quality improvement programs for patient care and service delivery, and so on.

Portfolio: Projects, programs, subsidiary portfolios, and operations managed as a group to achieve a strategic objective.

Understanding portfolios could be slightly different. Specific healthcare goals drive programs and projects in this case. A few examples of such initiatives are as follows.

- The Cancer Care Project by Oil and Natural Gas Corporation⁴ (ONGC) Limited – Funded by ONGC, a 455-bed quaternary care oncology center in Nagpur, India, provides comprehensive cancer care to the community.
- Maternal & Newborn Survival Initiative (MANSI) by Tata Steel Limited⁵ is a project to decrease infant mortality rates (IMR) and maternal mortality rates (MMR) in India. According to the information by Tata Steel, since its inception, the program has created a positive impact by reducing the following indices - Neonatal Mortality Rate (NMR) by 61%, Infant Mortality Rate (IMR) by 63%, and Child Mortality Rate (CMR) by 54.9%.
- Through their corporate social initiative, Bill & Melinda Gates Foundation⁶, India focuses on nutrition, maternal and newborn health, family planning, and control of infectious diseases.

Per Project Management Institute (PMI), the project, program, and portfolio concept involve analyzing and classifying similar component projects. Therefore, this article uses projects and programs interchangeably at places.

Mary: That is correct. As a novice in this field, I would like to get a general sense of the types of projects or programs in the healthcare industry. How are they, or can they be categorized? Is there a standard approach that can be taken for healthcare projects, or do they need to be classified differently?

Author: While there is no generally specified methodology for classifying projects or programs in the healthcare industry, it would be safe to assume that the classification of projects in the healthcare industry follows similar principles as that of other industries. We could also use the project, program, and portfolio concept for healthcare projects. More research into this field is required to meet the needs of the healthcare industry.

I have attempted the following to help you with this. The universe of projects in healthcare is vast. One option is to align them to dimensions such as patient processes, patient outcomes, healthcare delivery settings, etc. This approach keeps both constructs (healthcare industry and project classification) closely related. This approach also enables consistency in categorization should there be a change in the process elements.

The table below has an indicative list of projects from the universe of projects. Please note that this is only an indicative list, not a complete one. New projects and categories get added to this list continually. Also, note that there could be a multi-project mix that involves the integration of multiple project types. I have chosen these dimensions as they are critical for defining project initiation. I have also considered categories that can be aligned to projects/programs such as mobile health, technology enablement, education

and training, drug administration, assistive technologies such as robotic surgery or joint scanner, payer systems integration, mergers and acquisitions, quality improvement projects, regulation and compliance-related programs, and public health, etc.

Patient care delivery can be seen at the core of the healthcare project universe and needs to be visualized as a project for better patient outcomes (patient-centric care). As physicians, we are intricately involved in patient care as a project. Patient care and project management processes can be mapped to each other to realize the benefits of consummate patient care. Using an example of my ankle fracture recovery as a project, we can discuss this in subsequent conversations. The patient care project and its related elements may likely dominate my discussion. That’s intentional, as understanding core patient care concepts is vital to all healthcare-related projects.

Project Examples	Patient Care Value Chain	Categories	Healthcare Settings
Mobile Medical and Health programs	Treatment-based or Therapeutic Care	Mobile Health	Home - and Community-based services
Post Disaster Medical and Health Services	Treatment-based or Therapeutic Care	Disaster/Emergency Management	Hospital-based Care and Clinical Programs
Telemedicine	Treatment-based or Therapeutic Care Preventive Care	Technology Enablement	Hospital-based Care and Clinical Programs
Clinical Trial Research	Treatment-based or Therapeutic Care Preventive Care	Clinical trials	Hospital-based Care and Clinical Programs Population Health
Epidemiological and Epidemic Predictions Initiatives	Preventive Care	Community Health/Safety	Population Health
Covid-19 Global Vaccination Program	Healthcare Establishment	Healthcare Supply Chain Program Procurement/Vendor Management	Hospital-based Care and Clinical Programs Population Health
Patient-centered medical home (PCMH) - coordinated and integrated service.	Treatment-based or Therapeutic Care Preventive Care	Patient Care Delivery	Hospital-based Care and Clinical Programs Population Health
Healthcare Cross-disciplinary Partnerships for Research and Training Initiatives	Treatment-based or Therapeutic Care Preventive Care	Manpower Education and Training	Hospital-based Care and Clinical Programs Population Health
School-based Screening Programs	Screening	Screening	Population Health

Mary: This is helpful. How does this tie into handling these projects differently? For example, do we need to know the differences between a screening type of project, a preventive care project, or a treatment-based project? Also, how would a healthcare setting influence the projects?

Author: Understanding the project landscape is essential for project managers. The information helps them analyze and address the risk and decide to commit resources to the project to maximize project performance. The risks differ from therapeutic, preventive, screening, and infrastructure projects. This drives the budget, legal and compliance requirements, resource skill sets, type of project governance, and, most importantly, the risks one may encounter.

For example, a community health project could mean a grouping of a particular set of skills (knowledge and expertise) of the team members, technology support (e.g., use of mobile health in the community) needs, and risks that could be unique to a community health setting (e.g., water, sanitation challenges, epidemics, literacy, etc.). Component projects and activities under community health, when done together, help in gaining collective benefits (e.g., improvement of overall community health through herd immunity by executing vaccination and sanitation projects), governance need for oversight, and so on. These community health projects could be grouped into one category to realize the benefits that may not be possible when each project is managed in a silo.

Transitioning to ICD-10 from ICD-9 (International Classification of Diseases) on October 1, 2015, is an example of the project under the compliance umbrella. ICD-10 codes provide increased granularity in coding medical diagnoses and thus help support patient care, drive quality care, and above all, analytics of patient outcomes. The project involved multiple stakeholders from the U.S. Department of Health and Human Services (HHS), Centers for Medicare and Medicaid Services (CMS), hospitals, clearinghouses, the IT industry supporting healthcare, health plans, physician/specialty groups back offices, and more. In addition, the project was an extensive time-sensitive migration/conversion project with high technical complexity. As a result, the project was unique in its level, quality, quantity of resources needed, overall organizational impact, consequences of noncompliance, and, most importantly, cost.

I would also like to introduce you to HIMSS (Healthcare Information and Management Systems Society), a society committed to reforming the global health ecosystem by leveraging information technology in healthcare. There are a variety of IT initiatives conceived by HIMSS in various stages of execution. "A New Perspective on Global Healthcare" by HIMSS throws light on technology-enabled solutions for global challenges in their paper at <https://www.himss.org/sites/hde/files/himss-new-perspective-on-gobal-healthcare-prospectus.pdf>. I request that you review this information.

Mary: That is good to know. I am curious about PMI's Most Influential Projects of 2022. What do they signify?

Author: PMI’s Most Influential Projects of 2022 acknowledge the projects that are supposed to be game changers! These 50 projects selected from various domains exemplify creativity, innovation, and execution, turning ideas into reality. Ten out of the 50 chosen projects, a solid 20%, are from the healthcare domain. Isn’t that exciting? The following are a few of these ten projects. More details of these projects are available at <https://www.pmi.org/most-influential-projects-2022/top-10-by-industry/health>.

Pandemic X Accelerator	Treatment-based or Therapeutic Care Preventive Care Screening	Population Health	Manpower Education and Training
Onco KB	Treatment-based or Therapeutic Care Preventive Care	Hospital-based Care and Clinical Programs	Cancer Drugs Administration
Health Drone	Treatment-based or Therapeutic Care Preventive Care	Population Health	Healthcare Supply Chain Program Procurement/Vendor Management
Augmented Reality Joint Scanner	Treatment-based or Therapeutic Care Preventive Care	Hospital-based Care and Clinical Programs	Assistive Technology Services

Mary: This is helpful. I see that there are a variety of projects and programs, and there is an opportunity for new ones to be created. I guess the Covid-19 pandemic allowed novel projects to be initiated.

Author: The Covid-19 pandemic triggered a deluge of global projects and programs. The pandemic unearthed many gaps in the existing public health system and other operational entities. The gaps then called for new projects and programs to be created. The Covid-19 vaccination program is just one example of such needs. As of June 30, 2022, the World Bank⁷ approved operations to support the Covid-19 vaccination rollout in 78 countries, amounting to \$10.1 billion. This is one of the most significant funding by the World Bank for an ongoing crisis.

Johns Hopkins Bloomberg, School of Public Health maintains an inventory of projects and programs triggered by Covid-19. The development of Viral Domain as a treatment for COVID-19⁸ is one of the many new projects initiated by the pandemic. A few more from the same category are as follows. This is an indicative list only. Note that the core objective of these projects was combating Covid-19 with a multi-pronged attack with an early and accurate diagnosis, treatment, and prevention.

- Improving testing among vulnerable populations.

- Assessing and minimizing the adverse effects of the pandemic on students.
- Developing an early warning system to identify disease outbreaks.

Just as the universe has defined and undefined matter, the healthcare industry's project universe has unclear activities or initiatives. These may be out of a particular project or program scope but are in scope for achieving the ultimate objective. There could be innumerable such activities or projects.

There must be a backbone to drive the projects or their component activities. Of particular mention is the "Talent Triangle" - a concept by the Project Management Institute⁹ that helps project professionals work smartly. The Talent Triangle comprises power skills, principles of global working, and business acumen, which stresses interpersonal and communication skills, understanding macro- and micro-influences for decision-making, and ways of working that apply the proper technique to deliver successful project results.

Other than the Talent Triangle, the healthcare project teams need other critical skills such as teamwork, collaboration, shared decision-making, professional development, ethical grounding, etc. We can defer this discussion to a later date.

Mary: I am curious about the healthcare industry's job landscape.

Author: According to the Global Project Management Job Trends 2023 report¹⁰, healthcare jobs have an upward trend worldwide. While Asia Pacific digital health will see a 26% compound annual growth rate through 2023, with the surge of college students entering the job market, the Chinese government is seen to be encouraging the private and public sectors to expand opportunities, particularly in healthcare. Platform-driven digital health and acclimatization to virtual healthcare experience is poised to increase project activity related to these areas. As organizations look to scale platform-driven digital health and virtual healthcare experiences, technology-related project activity will increase in South Asian markets. Healthcare is likely to witness a 10% revenue boost in 2023, the highest increase among business sectors. In the United States, as those 65 years and older will consume healthcare resources, projects that expand access and capacity will see an increase.

Mary: Oh, that's good news. Looks like many new projects/programs are in the offing. Are the projects or programs in the healthcare industry managed differently? If yes, how? I am aware of the generic skills around managing projects. But do I need to learn something new to add to my current knowledge?

Author: I think that's the critical question for you. As discussed in the last conversation, the healthcare industry has unique properties and characteristics. Please remember that the project management framework cuts across industries, and no one-size-fits-all approach exists. Project managers need to know the big picture and the finer nuances of each industry that makes it unique. This will help you assess the blend of your skills and inclination to take roles in healthcare project management.

Out of the list from our earlier discussion, here are a few essential details to remember while managing projects or programs in the healthcare industry. First, being a “keeper of life,” remember that the healthcare industry has increased risks and complexity of projects. The complexity leads to a need for demanding project management practices.

- Healthcare is a 24*7 environment – planned well in advance as it can jeopardize patient care. A detailed schedule needs to be made well in advance—potentially to avoid a negative impact on the delivery of patient care. Notwithstanding the changing healthcare, there is a need to ensure ethics are held high, and there is no compromise on ethical consideration in patient care.
- The patient's well-being is at stake, and so is life! So, the project stakes are high. As is reminded by the Covid-19 pandemic, optimal population health is critical to an individual, community, and overall, the global economy by boosting its well-being and productivity. According to the Mckinsey Global Institute report¹¹, sub-optimal health can decrease global GDP by 15% yearly. That’s a staggering number!
- The healthcare industry is in constant flux. A flexible approach is needed to manage such a dynamic and fluid project. For example, regulations around patient data, hospital management, and diagnostic and therapeutic care modalities are ever-changing. In addition, the healthcare industry is person-dependent, where technology cannot replace professionals. This needs rigorous change management practices with a sensitivity to the unique needs.
- Diverse and highly passionate/dedicated stakeholders are a privilege to work with but can get challenging too. This group is highly engaged with projects and responds promptly. Stakeholders’ buy-in is essential for this group to accept change suggestions for timely care delivery.
- The healthcare industry is overly regulated and hugely litigation prone. In addition, a highly regulated environment differs from country to country and state to state in the US, and healthcare regulations vary– according to the federal and local legislature. As a result, healthcare professionals and facilities face substantial financial liabilities for violating regulations. An example of this could be violating compliance regulations with patients' personal health information governed by HIPAA regulations. Setting up clean, transparent, robust project management processes can mitigate this risk.
- There is zero tolerance for data loss with a full-proof backup for everything – retrieval, filing, and updating patient care records, so the patient information is not lost. In addition, data encryption needs technology solutions so that private data is protected. Finally, healthcare data breaches can negatively affect

hospitals and providers, such as threats to brand identity and reputation, loss of clients, and, most importantly, loss of trust.

- Deglobalization can impact the healthcare industry much harder than any other industry causing shortages of essential supplies. Deglobalization, increased border controls, and overregulation of movement between nations for newer vaccines and other healthcare-related products can hamper supply chains.
- Emerging technologies will invade the healthcare industry shortly. As a result, healthcare stakeholders will conceptualize new projects related to these technologies. For example, open AI-based ChatGPT, a language module, is a new entrant in this field, promising activities such as clinical documentation, patient education, creation of clinical references, acting as a medical chatbot, and so on. Other tools on the radar are based on cloud technologies, the Internet of Things (IoT), natural language processing (NLP), machine learning (ML), etc.

Outlining roles and responsibilities for a healthcare project manager and team is another exciting topic, and we can discuss it over another conversation.

Mary: Thank you, doctor. I agree. Given my understanding of this universe of projects in the healthcare industry, I am now curious to know about a few unique topics or projects. As an aspiring healthcare project manager, not only will these details help me understand the finer nuances of these concepts, but they will also help me understand the skills needed to be successful.

Author: Sure. That's a good idea. I will pick up a few topics for our subsequent discussions.

Conclusion

Healthcare is an exciting field where the need for projects to deliver their intended value continues. The universe of healthcare projects is also dynamic, with new projects being added to meet the needs of this ever-changing industry, its demographics, and economic shifts. Grasping opportunities and responding quickly to emerging needs is the need of the day. A recent example of this is the group of projects triggered by Covid-19. Other than the pandemic, new projects will likely evolve around scenarios such as the aging population, emerging technologies, mitigation of risk around healthcare workers' shortages, the preventive care movement, occupational/employee health, and changes in work-related ethics and needs of Generation X or later.

Barely scratching the surface, this article provides a superficial view of an approach to grouping the projects. The grouping can help researchers and practitioners tailor the project requirements to drive project success. More research is needed to define a standard classification for projects in the healthcare industry that represents patterns, associations, and novel ways of visualizing them.

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12. PMBOK® Guide – Seventh Edition

* - Name changed to protect privacy

Glossary

AI: Artificial Intelligence

CMS: Centers for Medicare and Medicaid Services

HHS: U.S. Department of Health and Human Services

HIMSS: Healthcare Information and Management Systems Society

HIPAA: Health Insurance Portability and Accountability Act

IT: Information Technology

ML: Machine Learning

PM: Project Management

PMBOK®: Project Management Body of Knowledge

PMI: Project Management Institute

WHO: World Health Organization

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About the Author



Dr. Deepa Bhide

Hyderabad, India



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.

Her passion for IT and Project Management was born from her day-to-day patient interactions. Deepa's growing interest and work in these areas 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. Deepa is an active contributor to PMI with her articles on a cross-domain confluence of Healthcare and Project Management. 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, wholesome view of Project Management and Healthcare. 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 and also for Human Physiology, she went ahead to pursue her DCH in Pediatrics and Child health. Deepa is an active member of their volunteer initiatives. Deepa has served a variety of roles in local and global PMI regions. The part of Council Lead for PMI's Healthcare Community of Practice for two years (2013-15) involved identifying and mentoring volunteers and collaborating across geographies for knowledge assets. Deepa is currently a part of PMI's Ethics Insight Team, a global team of 7 volunteers advocating PMI's Code of Ethics and Professional Conduct.

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