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Optimizing Health Informatics Initiatives with the Microsoft Project Tools: A Management Case Review

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Abstract

The focus of this paper is on basic project management practices in healthcare informatics, particularly risk and configuration management. Highly complex healthcare technologies, such as the integration of electronic health records (EHRs), the implementation of clinical decision support systems, and the interoperability of health data, require careful structuring of decomposition, estimation, and management of continuously evolving requirements. This analysis uses an adapted case study and Microsoft Project to illustrate the integration of PERT and CPM principles with expectation management and project estimation models in the configuration management of healthcare informatics, where clinical safety, data integrity, regulatory compliance, and system reliability and availability are critical.

Keywords: MS Project, PERT, CPM, COCOMO, WBS, Health Informatics

1. Introduction

1.1 Background

Healthcare informatics projects differ from traditional software development in that they involve multidisciplinary collaboration, operate in regulated environments, handle sensitive data, and support safety-critical workflows. Project managers are required to coordinate clinical, technical, and organizational resources while balancing constraints related to scope, time, cost, and quality. In this particular domain, the planning phase includes risk assessment pertaining to patient safety and data privacy, configuration control compliance, control focused on regulatory assurance and clinical validation, patient-focused clinical planning, and control scheduling support for clinical workflows. The project estimate includes evaluating staff requirements, technology, training, and compliance-related activities, including Health Insurance Portability and Accountability Act

(HIPAA), cybersecurity, secure architectures, clinical validation, system and interface testing, and lifecycle maintenance, as well as compliance with the project scope and the clinical setting.

2. Implementation Framework

2.1 Project Estimation in Healthcare Informatics

The healthcare information systems market is highly complex, and determining the accuracy of project estimation in healthcare informatics is equally sophisticated. These four approaches are the most common:

1. Fuzzy Logic: Estimates are made based upon the data collected during the implementation of the clinical systems in the past.
2. Function Point Analysis: The division of clinical activities into manageable functional units, such as patient registration, lab retrievals, and medication ordering, is decomposed.
3. Standard Components. The component modules—reporting, data extraction, interoperability interfaces, and clinical dashboards —are planned systematically.
4. Change Sizing. The evaluation of the system's increase and the changes made to it in code, configuration, or system workflows, or changes to system workflows to comply with set boundaries, is conducted in accordance with system directives that address these boundaries.

2.1.1 Cost Estimation Techniques for Healthcare Projects

Cost estimation in healthcare informatics must account for system certification, clinical validation cycles, infrastructure reliability, cybersecurity protections, and compliance audits. Methods include expert judgment, analogous cost modelling, top-down and bottom-up estimation, and collaborative techniques such as the Delphi method (Donovan et al., 2023). The COCOMO model remains applicable for software-intensive components, provided it is adjusted for healthcare-specific constraints.

2.1.2 Managing Expectations with Clinical Stakeholders

The completion of healthcare informatics projects warrants the involvement of clinicians, managers, information technology personnel, compliance professionals, and third-party, external distributors (McGuier et al., 2024). The efficient controlling of overarching expectations is fulfilled through the following:

1. Properly capturing and developing the system requirements.
2. Articulating and delineating the margins of systems and expected clinical objectives
3. Outcome-based alteration control system that sanctions changes to clinical processes.
4. Continuous communication regarding risk, system behavior, patient safety implications, and compliance status (Zhou et al., 2021)
5. Periodic reassessment of timelines and clinical readiness

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2.2 Work Breakdown Structure (WBS) for Healthcare Projects

A WBS organizes tasks into clinically and technically meaningful segments (Donato & Donato, 2025), such as:

- Requirements gathering and clinical workflow analysis (Staras et al., 2021)
- System architecture and security design (Greenhouse et al., 2021)
- Interface development (HL7, FHIR, DICOM)(Tang et al., 2023)
- Data migration and mapping (Shaik et al., 2023)
- Clinical validation and usability testing (Radecki, 2024)
- Training and Change Management (Wick et al., 2023)
- Go-live planning and clinical support (Buljac-Samardzic et al., 2020)

2.3. *Scheduling and Tracking Process*

Scheduling in healthcare informatics must consider clinical operational constraints (Duftschmid et al., 2002).

PERT and CPM methodologies assist in identifying:

- Critical-path activities affecting clinical go-live dates (Bieske et al., 2023b)
- Dependencies between clinical validation, interface testing, and integration with existing hospital information systems (Hauschild et al., 2022)
- Buffer times to mitigate risks related to regulatory reviews or interoperability issues (Khalil et al., 2023)

Gantt charts facilitate continuous tracking of tasks, resource allocation, and risk mitigation activities.

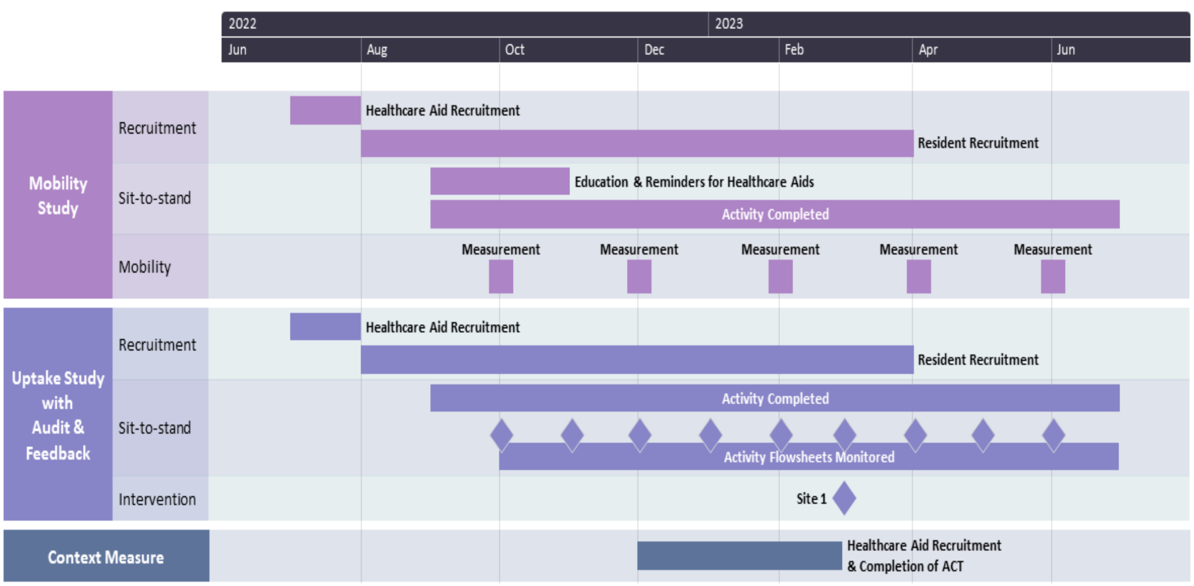

Figure 1. MS Project Schedule Tracking

3. Case Analysis with Emphasis on Risk and Configuration Management in Healthcare Informatics

3.1. Risk Management in Healthcare Informatics

Risk management is critical in healthcare informatics because of patient safety implications, regulatory requirements, and the sensitivity of health data (Subramanian et al., 2024). The key risk characteristics of uncertainty and potential loss assume unique dimensions in this context (Marinho et al., 2014):

Risk Categories:

- Clinical Risk: Potential impact on patient safety due to incorrect data, delays in clinical decision support alerts, or system downtime (Wright et al., 2016).
- Technical Risk: Issues with interoperability, cybersecurity vulnerabilities, system performance, and data integrity (Gopstein et al., 2020)
- Operational Risk: Disruptions to clinical workflow, insufficient training, or inadequate support during go-live (Ajayi et al., 2025b)
- Regulatory Risk: Failure to comply with HIPAA, CMS, ONC certification requirements, or state-level data protection regulations (Neupane et al., 2025)
- Business/Financial Risk: Cost overruns due to revalidation cycles, vendor delays, or unplanned compliance changes (Dissanayake et al., 2022)

Healthcare risk management requires structured processes as follows:

1. Risk Identification: Detecting clinical, technical, regulatory, and operational threats (ElSayed et al., 2024)
2. Risk Assessment: Quantifying severity based on likelihood and patient-safety impact (Ajitsaria et al., 2018)
3. Prioritization: Elevated priority for risks affecting clinical care or regulatory compliance (Pascarella et al., 2021)
4. Risk Planning: Designing mitigation strategies such as backup systems, redundant interfaces, security hardening, and clinical validation cycles (Laszka et al., 2018)
5. Risk Control: Implementing active measures and monitoring throughout the project lifecycle (Hossain et al., 2021)
6. Risk Monitoring: Tracking risk-trigger events and updating risk responses (Gupta & Vipin, 2024)

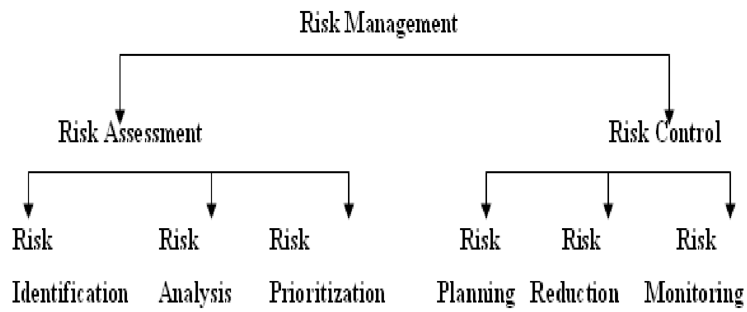

Figure 2. Risk Management Tree

3.2 Configuration Management in Healthcare Informatics

Configuration management (CM) is central to healthcare informatics because clinical systems must maintain strict version control, integrity, and traceability (Hauschild et al., 2022).
CM ensures that all changes are rigorously reviewed to prevent unintended consequences in live clinical environments (Hauschild et al., 2022).

Key Functions of Configuration Management:

- Version Control: Tracking changes to EHR modules, clinical decision support rules, patient monitoring interfaces, and device configuration files (Rule et al., 2019).
- Change Control: Ensuring approval from clinical and compliance stakeholders before modifying workflows, alert logic, or data structures.
- Baseline Management: Establishing controlled baselines for clinical workflows, data mappings, interface configurations, and documentation (Bastola et al., 2025b).
- Audit and Traceability: Providing a clear chain of evidence for regulatory compliance and incident investigations (Picaud et al., 2025).
- Impact Analysis: Evaluating the effect of changes on clinical operations, interoperability channels, and patient safety (Borrelli et al., 2025).

Configuration management prevents configuration drift, enables rollback capabilities, and safeguards against inconsistent clinical system behavior. Formal governance processes ensure that clinical safety is prioritized over technical convenience (Ranković et al., 2024).

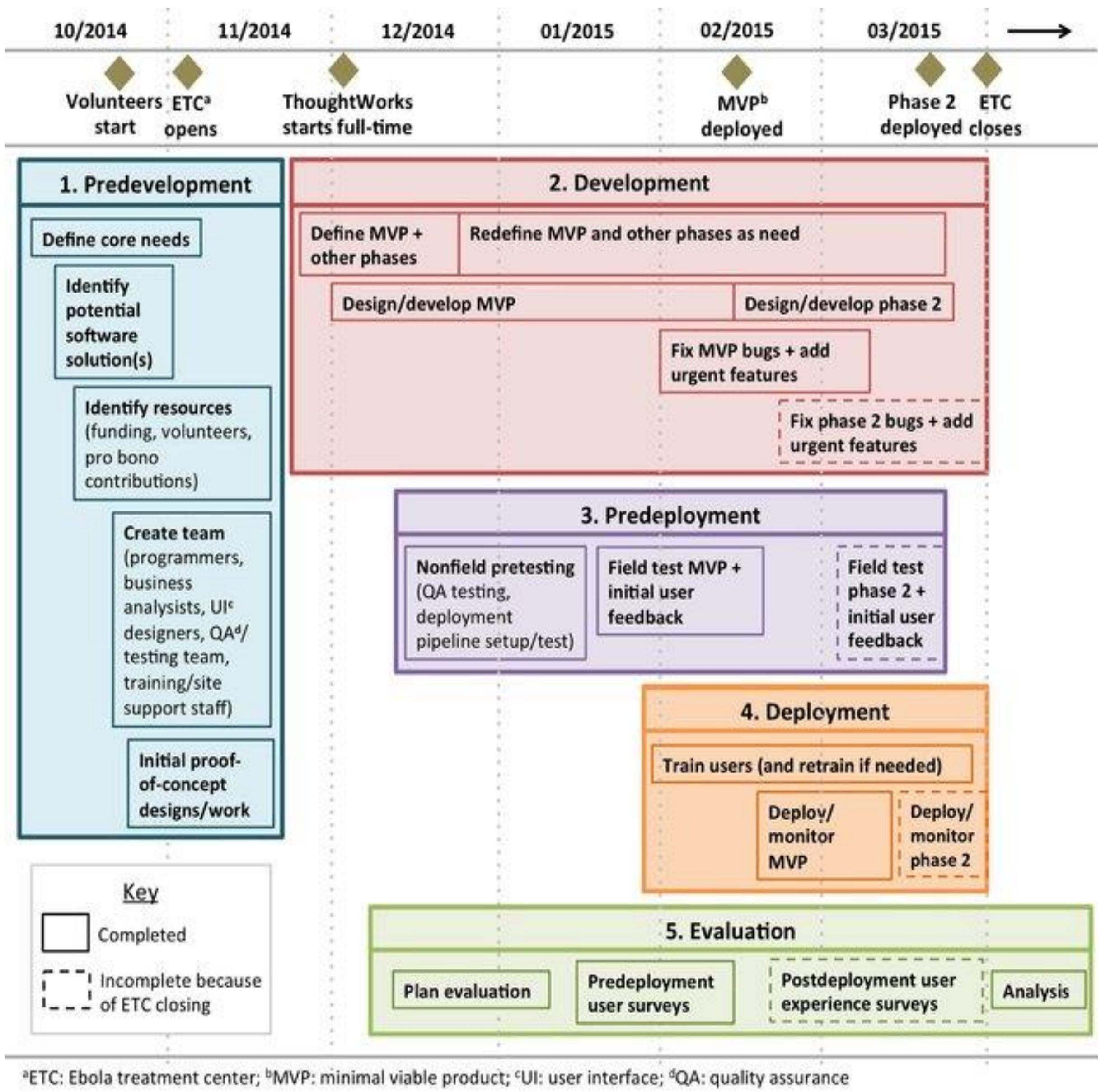

Figure 3. Stages in deployment of an electronic health record (EHR) for health emergencies (Source: Oza et al., 2017, https://doi.org/10.2196/jmir.7881)

3.3 Project Phases and Milestones with MS Project Integration

The informatics healthcare project followed a six-phase lifecycle, managed and monitored through MS Project. This approach facilitated effective oversight of dependencies, risk, and compliance milestones. Each phase employed Microsoft Project's Gantt Chart, resource allocation features, and risk-tracking system.

Phase 1: Project Start and Requirement Identification

During this phase, a preliminary schedule was developed in MS Project to estimate required timelines and establish task dependencies using the tool's task linking functionality. The system facilitated the scheduling of stakeholder interviews, clinical workflow observations, and requirements documentation.

Milestone: All stakeholders have received the Clinical Requirements Validation Report and the Approved System Architecture and Security Design Document.

Risk Management: MS Project completed the risk register view, which identifies and describes early-stage work deficits among clinicians.

Phase 2: Development of System Design and Architecture

During design, the MS Project chart with resource allocations displayed task assignments for developers, clinical advisors, and compliance officers. Design iterations with changes to the project scope were monitored by resaving the baselines at each phase.

Milestone System Architecture and Security Design Document Approved.

Risk Management: Heuristic slack time lowered Hamiltonian guide regulatory review. Buffers were added to account for review delays, using schedule slack time.

Phase 3: Development and Integration of the Interface

For this task, the developers used MS Project's critical path view, which allows the project manager to see the non-parallel tasks and their dependencies for developing HL7/FHIR interfaces, migrating data, and validating test data. The system flagged potential areas of the timeline that could bottleneck and delay merging the systems.

Milestone: Completion of HL7/FHIR interface integration for system interoperability.

Risk Management: All interoperability failure issues were documented and monitored in MS Project's task dependency matrix, then recorded in the active Issues folder, enabling timely and proactive reallocation of assets and resources.

Phase 4: Validation of the System and Clinical Validation, plus other User Tests

Clinical and systems validation required collaboration between business and technology specialists. Insufficient use of MS Project's resource usage reports resulted in overly conservative resource and task allocation, which jeopardized the testing schedule.

Milestone: Completion of Clinical Validation and User Acceptance Testing (UAT).

Risk Management: A quick estimate of the work using MS Project's timeline planning, also known as the Gantt chart, indicated that missing software or changes to the workflow would delay the testing phase.

Phase 5: Training and Change Management

Remaining milestones, such as modular training sessions and various assessments, were managed using MS Project's recurrence task features.

Milestone: Completion of clinical user training and user certification.

Risk Management: Continuous monitoring of training programs using the Gantt view in MS Project revealed discrepancies between planned and actual training timelines, prompting reallocation of training resources and implementation of a fast-tracking system.

Phase 6: Go-Live and Post-Implementation Review

Phase six encompassed system go-live and post-implementation review. All integration activities, progress tracking, and configuration audits were consolidated as a single milestone in MS Project. Earned Value Analysis (EVA) was applied to assess post-go-live cost performance and earned value indices, utilizing MS Project as the primary scheduling tool.

Milestone: Successful ‘Go live’ completion with confirmation of system stability.

Risk Management: ‘Risk gap’ flags identified unaddressed issues like untested panels of interoperability and, with MS Project, the components of the EVA modular system used for configuration routing to aid project follow-up.

3.4 MS Project–Enabled Risk and Configuration Coordination

The MS Project system supports Planning, Risk Reconfiguration, Integration, and Interdependency Structure Rehabilitation. For ease of use and interoperability, MS Project was the primary tool for each phase of the project to configure risks and issues related to progress on the system configuration. MS Project constitutes the core of the complete risk and configuration coherence interface.

Risk Integration: Every risk recorded conceives a corresponding response in the organisational Work Breakdown Structure captured in dynamic books.

Configuration Baselines: Using the configuration baselines, a project manager can administer each part of the project’s release and benchmark planned outcomes with live progress to ensure uncontrolled configuration changes are documented for archival.

Communication and Reporting: MS Project recognises a modular subsystem for collaboration that draws on the central MS Project system and enables the smooth functioning of the MS Project system with subsystem components of the EVA modular system. Internal reports are used to present project progress elements for a given time cycle. Notes for a specific cycle, collected from internal reports, are merged with general project documents in MS Project.

Continuous Improvement: MS Project enables the aggregation of information blocks for reporting. Post-project closure reports incorporate notes on unresolved issues and configuration changes in closed systems, highlighting closed-loop activities that establish baselines for future closed system workflows.

4. Key Capabilities of MS Project Tool in Healthcare Informatics

Microsoft Project supports planning, scheduling, risk tracking, and resource allocation. (*How Project Schedules Tasks: Behind the Scenes - Microsoft Support*, n.d.)

Key capabilities tailored for healthcare informatics include:

- Templates for recurring healthcare project types (EHR upgrade, interface implementation) (*Project Management for Healthcare*, 2023)
- Tracking change requests related to regulatory updates or clinical workflow modifications (*Project Management for Healthcare*, 2023)
- Visualizing dependencies between clinical validation and system integration (Hauschild et al., 2022)
- Automated notifications to highlight schedule impact from unresolved clinical risks (Ciervo et al., 2019)

Furthermore, MS Project can facilitate communication across multidisciplinary teams by providing a centralized platform for project status and resource management (*Best Marketing Project Management Software 2025 | Reviews, Features, Pricing*, n.d.).

5. Lessons Learned and Best Practices

Based on this healthcare case study, the use of Microsoft Project demonstrates that digital project management tools can increase coordination, improve traceability, and enhance compliance. Important recommendations for healthcare administrators include setting clear targets at each project stage, maintaining active, clinical-milestone-driven dynamic risk registers, and fostering open-level automated reporting dashboards. These practices facilitate proactive risk mitigation, evidence-based decision-making at every level, and real-time alignment of clinical and technical objectives. This leads to greater project efficiency and improvement of patient safety outcomes.

6. Reflection, Insights, and Conclusion

Healthcare informatics projects demand disciplined project management with a strong focus on risk and configuration management. Microsoft Project enables structured planning, rigorous scheduling, and ongoing oversight of risk and change. Integrating PERT into CPM helps the project manager identify critical path tasks and forecast delays (*Meegle | Free Download PERT/CPM Integration Matrix Template*, n.d.). The structured, systematic configuration management of clinical systems enhances traceability, facilitates regulatory compliance in the healthcare domain, protects patient safety, and enables the safe and efficient use of systems that are constantly evolving (Kinkelin et al., 2018). Implementing these interconnected practices reduces the likelihood of negative project outcomes, enhances project success, and improves reliability and safety in healthcare services.

References

Ajayi, F., Andrews, M., Cooper, L., Harrison, J., Hudson, M., Knight, I., Robinson, L., Savage, M., Uka, S., Norbury, M., Rice, P., Shaw, S., AIREDALE NHS FOUNDATION TRUST, & PWC. (2025b). Agenda – Board of Directors meeting IN PUBLIC 2 April 2025. In A. Withers, *AIREDALE NHS FOUNDATION TRUST*. https://www.airedale-trust.nhs.uk/wp-content/uploads/2025/04/Public-Trust-Board-2-April-2025-Agenda-and-papers_Final.pdf

Ajitsaria, P., Eissa, S. Z., & Kerridge, R. K. (2018). Risk assessment. *Current Anesthesiology Reports*, *8*(1), 1–8. https://doi.org/10.1007/s40140-018-0246-9

Borrelli, Taneja, E. P., Weiss, A., Wilson, M., & Nicole. (2025). Economic Impact of Smart Infusion Pump Interoperability: A Cost-Benefit Analysis. Value in Health 28. https://www.ispor.org/heor-resources/presentations-database/presentation-cti/ispor-2025/poster-session-2/economic-impact-of-smart-infusion-pump-interoperability-a-cost-benefit-analysis

Bastola, N. D., Tcheng, J. E., Schlossman, D. M., & Windle, J. R. (2025b). Framework for improving patient safety: reference model for FHIR-Enabled, Patient-Centric home medication list management and medication reconciliation. *Applied Clinical Informatics*, *16*(04), 1136–1145. https://doi.org/10.1055/a-2599-4135

Best Marketing Project Management Software 2025 | Reviews, features, Pricing. (n.d.). https://wheelhouse.com/categories/marketing-project-management-software

Bieske, L., Zinner, M., Dahlhausen, F., & Truebel, H. (2023b). Critical path activities in clinical trial setup and conduct: How to avoid bottlenecks and accelerate clinical trials. *Drug Discovery Today*, *28*(10), 103733. https://doi.org/10.1016/j.drudis.2023.103733

Buljac-Samardzic, M., Doekhie, K. D., & Van Wijngaarden, J. D. H. (2020). Interventions to improve team effectiveness within health care: a systematic review of the past decade. *Human Resources for Health*, *18*(1), 2. https://doi.org/10.1186/s12960-019-0411-3

Ciervo, A. et al. (2019). Automated Notifications to Highlight Schedule Impact from Unresolved Clinical Risks. Journal of Healthcare Management 64. https://doi.org/10.1097/JHM-D-18-00123

Dissanayake, N., Zahedi, M., Jayatilaka, A., & Babar, M. A. (2022). Why, how and where of delays in software security patch management: An Empirical investigation in the healthcare sector. *Proceedings of the ACM on Human-Computer Interaction*, *6*(CSCW2), 1–29. https://doi.org/10.1145/3555087

Donato, H., & Donato, H. (2025, January 15). *What is a Work Breakdown Structure (WBS)?* project-management.com. https://project-management.com/work-breakdown-structure-wbs/

Donovan, T., Abell, B., Fernando, M., McPhail, S. M., & Carter, H. E. (2023). Implementation costs of hospital-based computerised decision support systems: a systematic review. *Implementation science : IS*, *18*(1), 7. https://doi.org/10.1186/s13012-023-01261-8

Duftschmid, G., Miksch, S., & Gall, W. (2002). Verification of temporal scheduling constraints in clinical practice guidelines. *Artificial Intelligence in Medicine*, *25*(2), 93–121. https://doi.org/10.1016/s0933-3657(02)00011-8

ElSayed, Z., Elsayed, N., & Bay, S. (2024, January 14). *A novel Zero-Trust Machine Learning Green Architecture for Healthcare IoT Cybersecurity: Review, analysis, and implementation*. arXiv.org. https://arxiv.org/abs/2401.07368

Gopstein, A., Nguyen, C., Engineering Laboratory, Byrnett, D. S., Worthington, K., National Association of Regulatory Utility Commissioners, Villarreal, C., & Plugged In Strategies. (2020). Framework and Roadmap for Smart Grid Interoperability Standards: Regional

Roundtables Summary Report. In *NISTIR 8284*. U.S. Department of Commerce. https://nvlpubs.nist.gov/nistpubs/ir/2020/NIST.IR.8284.pdf

Gupta, Mishra, K., Makkar, V. & Aaisha. (2024). A Global Cybersecurity Standardization Framework for Healthcare Informatics. https://arxiv.org/abs/2410.05333

Greenhouse, A., Wrage, L., & Hansson, J. (2021). Modelling and validating security and confidentiality in system architectures. *KiltHub Repository*. https://doi.org/10.1184/r1/13659911

Hauschild, A. C., Martin, R., Holst, S. C., Wienbeck, J., & Heider, D. (2022). Guideline for software life cycle in health informatics. *iScience*, *25*(12), 105534. https://doi.org/10.1016/j.isci.2022.105534

Hossain, M., Tareque, M., & Hassan, M. (2021). Training and Development as a Strategic Tool for Implementation of ERM in Post-Pandemic Times: A Study on Readymade Garments Industry in Bangladesh. Globsyn Management Journal, 15(1/2), 60-66.

How Project schedules tasks: Behind the scenes - Microsoft Support. (n.d.). https://support.microsoft.com/en-us/office/how-project-schedules-tasks-behind-the-scenes-df3431ab-8d8a-4047-afc6-a87b547dbac0

Implementation Planning: tutorial and case study. *JMIR Mhealth and Uhealth*, *9*(3), e18534. https://doi.org/10.2196/18534

Khalil, R., Macdonald, J. C., Gustafson, A., Aljuburi, L., Bisordi, F., & Beakes-Read, G. (2023). Walking the talk in digital transformation of regulatory review. *Frontiers in Medicine*, *10*, 1233142. https://doi.org/10.3389/fmed.2023.1233142

Kinkelin, H., Hauner, V., Niedermayer, H., & Carle, G. (2018, April 13). *Trustworthy Configuration Management for Networked Devices using Distributed Ledgers*. arXiv.org. https://arxiv.org/abs/1804.04798

Laszka, Aron, Abbas, Waseem, Vorobeychik, Yevgeniy, Koutsoukos & Xenofon. (2018). Synergistic Security for the Industrial Internet of Things: Integrating Redundancy, Diversity, and Hardening. https://arxiv.org/abs/1808.09090

Marinho, M., Sampaio, S., Lima, T., & De Moura, H. (2014). A Systematic review of uncertainties in software project management. *International Journal of Software Engineering & Applications*, *5*(6), 1–21. https://doi.org/10.5121/ijsea.2014.5601

Meegle | Free Download PERT/CPM Integration Matrix Template. (n.d.). https://www.meegle.com/en_us/advanced-templates/pert/pert_cpm_integration_matrix_template

McGuier, E. A., Kolko, D. J., Aarons, G. A., Schachter, A., Klem, M. L., Diabes, M. A., Weingart, L. R., Salas, E., & Wolk, C. B. (2024). Teamwork and implementation of innovations in healthcare and human service settings: a systematic review. *Implementation Science*, *19*(1), 49. https://doi.org/10.1186/s13012-024-01381-9

Neupane, S., Mittal, S., & Rahimi, S. (2025, April 24). *Towards a HIPAA-compliant agentic AI system in healthcare*. arXiv.org. https://arxiv.org/abs/2504.17669

Pascarella, G. et al. (2021). Risk Analysis in Healthcare Organizations: Methodological Framework and Critical Variables. https://www.dovepress.com/article/download/66734

Picaud, Herlem, F., Chaussy, G. & Yann. (2025). Traceability of Surgical Instruments: A Systematic Review. Applied Sciences 15. https://www.mdpi.com/2076-3417/15/3/1592

Oza, S., Jazayeri, D., Teich, J. M., Ball, E., Nankubuge, P. A., Rwebembera, J., Wing, K., Sesay, A. A., Kanter, A. S., Ramos, G. D., Walton, D., Cummings, R., Checchi, F., & Fraser, H. S. (2017). Development and deployment of the OpenMRS-Ebola Electronic Health Record System for an Ebola treatment centre in Sierra Leone. *Journal of Medical Internet Research*, 19(8), e294. https://doi.org/10.2196/jmir.7881

Proactive risk management: Controlling uncertainty in product development. (n.d.). Routledge & CRC Press. https://www.routledge.com/Proactive-Risk-Management-Controlling-Uncertainty-in-Product-Development/Smith-Merritt/p/book/9781563272653

Project management for healthcare. (2023, January 21). https://www.projectmanagementinhealthcare.org/book-review-project-management-for-healthcare

Radecki, R. P. (2024). Where do we go wrong? *Annals of Emergency Medicine*, *83*(6), 621–623. https://doi.org/10.1016/j.annemergmed.2024.04.005

Ranković, T., Šiljić, F., Tomić, J., Sladić, G., & Simić, M. (2024, October 26). *Misconfiguration prevention and error cause detection for distributed-cloud applications*. arXiv.org. https://arxiv.org/abs/2410.20273

Rule, A., Chiang, M. F., & Hribar, M. R. (2019). Using electronic health record audit logs to study clinical activity: a systematic review of aims, measures, and methods. *Journal of the American Medical Informatics Association*, *27*(3), 480–490. https://doi.org/10.1093/jamia/ocz196

Shaik, T., Tao, X., Li, L., Xie, H., & Velásquez, J. D. (2023, June 21). *A Survey of Multimodal Information Fusion for Smart Healthcare: Mapping the Journey from Data to Wisdom*. arXiv.org. https://arxiv.org/abs/2306.11963

Staras, S., Tauscher, J. S., Rich, N., Samarah, E., Thompson, L. A., Vinson, M. M., Muszynski, M. J., & Shenkman, E. A. (2021). Using a clinical workflow analysis to enhance eHealth

Subramanian, H., Sengupta, A., & Xu, Y. (2024). Patient Health Record Protection Beyond the Health Insurance Portability and Accountability Act: Mixed Methods study. *Journal of Medical Internet Research*, *26*, e59674. https://doi.org/10.2196/59674

Tang, S., Tjia, V., Noga, T., Febri, J., Lien, C., Chu, W., Chen, C., & Hsiao, C. (2023). Creating a medical imaging workflow based on FHIR, DICOMWeb, and SVG. *Journal of Digital Imaging*, *36*(3), 794–803. https://doi.org/10.1007/s10278-021-00522-6

Wright, A., Hickman, T. T., McEvoy, D., Aaron, S., Ai, A., Andersen, J. M., Hussain, S., Ramoni, R., Fiskio, J., Sittig, D. F., & Bates, D. W. (2016). Analysis of clinical decision support system malfunctions: a case series and survey. *Journal of the American Medical Informatics Association*, *23*(6), 1068–1076. https://doi.org/10.1093/jamia/ocw005

Zhou, X., Ahmed, B., Aylor, J. H., Asare, P., & Alemzadeh, H. (2021, April 6). *Data-driven design of context-aware monitors for hazard prediction in artificial pancreas systems*. arXiv.org. https://arxiv.org/abs/2104.02545