IIHMR DELHI | INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH

Post Graduate Diploma in Management (Hospital & Health Management)

PGDM – 2024-26 Batch

1st Year – 2nd Semester End Examination

Subject & Code	:	**Essential of Hospital Services (EHS)-CC 615**	**Reg. No.**	:	
Semester & Batch	:	**II, 2024-26**	**Date**	:	**24-04-2025**
Time & Duration	:	**10:30 A.M.-01:30 P.M. (3 Hrs.)**	**Max. Marks**	:	**70**

Instructions:

- Budget your time as per the marks given for each question and write your answer accordingly.
- Don't write anything on the Question Paper except writing your Registration No.
- Mobile Phones are not allowed even for computations.

Part A: Q.1 to Q.10 all questions are compulsory (10 X 2 Marks = 20 Marks)

Q1. Which of the following institutions is considered the earliest known hospital that provided care for the sick regardless of social status and included specialized wards and trained staff?

A. Valetudinarium of Ancient Rome

B. Bimaristan of Baghdad

C. Temple of Asclepius in Epidaurus

D. Hotel-Dieu of Paris

Q2. Which of the following best explains the primary distinction between a Single-Payer Healthcare System and a Universal Healthcare System?

A. Single-payer systems rely entirely on private insurance, whereas universal systems use only public funds.

B. Universal healthcare guarantees coverage for all citizens, while single payers refer specifically to having one public agency that manages health financing.

C. Single-payer systems include both public and private insurers, while universal systems are managed by a single insurer.

D. Universal healthcare is limited to hospital care, while single-payer includes all levels of care, including pharmaceuticals and mental health.

Q3. Which of the following best differentiates a Tertiary Care Hospital from a Quaternary Care Hospital in terms of classification and service provision?

A. Tertiary care hospitals provide long-term rehabilitation, while quaternary care hospitals focus on emergency and trauma services only.

B. Tertiary care hospitals include teaching and research institutions, whereas quaternary care hospitals exclude academic functions in favor of specialized surgical units.

C. Tertiary care hospitals offer specialized consultative care, typically on referrals from primary or secondary providers, while quaternary care hospitals offer ultra-specialized, experimental, or uncommon procedures often unavailable at tertiary centers.

D. Tertiary care hospitals are government-run facilities, while quaternary care hospitals are exclusively private and corporate-funded institutions.

Q4. A 300-bed hospital has an occupancy rate of 70% and generates an annual revenue of Rs 91,980,000. If the hospital increases its occupancy rate to 85% the following year while maintaining the same ARPOB, which of the following would be the expected total annual revenue?

A. Rs-111,870,000

B. Rs- 102,564,000

C. Rs- 119,070,000

D. Rs-107,730,000

Q5. A hospital is planning to launch a new specialty wing with an estimated fixed cost of Rs 15,000,000 and a variable cost of Rs- 800 per patient. Market research predicts an initial patient inflow of 12,000 patients annually, and the hospital plans to charge Rs 2,200 per patient. Assuming the hospital wants to achieve a breakeven point within 3 years, what is the minimum annual patient volume required to meet this target?

A. 8,523 patients

B. 9,375 patients

C. 10,227 patients

D. 11,364 patients

Q6. Which of the following strategies, if improperly implemented, is most likely to result in a paradoxical increase in a hospital's overall carbon footprint, despite being labeled as an environmentally friendly "green" initiative?

A. Installing solar photovoltaic panels on the hospital roof without integrating real-time load balancing and energy storage systems.

B. Replace all incandescent bulbs with LED lighting across clinical and administrative areas.

C. Adopting a hospital-wide digital records system to eliminate paper use and reduce physical storage requirements.

D. Implementing a rainwater harvesting system with non-potable reuse for HVAC cooling towers.

Q7. Which of the following zoning configurations within a hospital most critically violates international standards for infection control and disrupts the intended unidirectional flow of sterile and contaminated materials?

A. Placing the Central Sterile Services Department (CSSD) adjacent to the Operating Theatres with separate clean and dirty corridors.

B. Locating the Intensive Care Unit (ICU) in a restricted zone connected via an isolated air-handling unit and swipe-controlled access.

C. Designating a shared access corridor between the dirty utility area and sterile supply storage within the same floor of a surgical block.

D. Positioning outpatient clinics in the peripheral zone with direct public access and separate entry from emergency services.

Q8. Which of the following best highlights a critical limitation in the implementation of the Progressive Patient Care (PPC) model in large tertiary hospitals, despite its theoretical efficiency in resource utilization and continuity of care?

A. PPC increases the duplication of diagnostic services due to patient categorization based on clinical specialties rather than acuity.

B. The transition of patients through varying levels of care in PPC can fragment interdisciplinary team continuity and impair specialized care delivery.

C. The PPC model inherently reduces the need for critical care infrastructure, leading to under-preparedness during mass casualty incidents.

D. It restricts the adoption of electronic health records (EHR) due to the decentralized nature of data management across progressive care units.

Q9. The hospital's operating room measures 8 m × 6 m × 3.2 m. The HVAC system is designed to supply 1,600 cubic meters of air per hour, while 400 cubic meters per hour is exhausted directly to the outside. The remaining air is recirculated through HEPA filters.

Assuming no significant air leakage, what is the effective Air Changes Per Hour (ACH) for this room based on the total air supply?

A. 8.3 ACH

B. 10.4 ACH

C. 12.2 ACH

D. 13.0 ACH

Q10. Which of the following architectural or operational design decisions in a patient-focused hospital model is most likely to conflict with evidence-based principles of patient safety and care continuity, despite being aligned to enhance patient autonomy and comfort?

A. Single-bed rooms with decentralized nursing pods to enhance privacy and nurse-patient interaction.

B. Decentralized pharmacy dispensing units on each ward to improve medication turnaround time.

C. Designing modular patient care units with direct family access, patient-controlled lighting, and meal customization interfaces.

D. Fully decentralized clinical documentation systems across care units to allow real-time charting at the point of care.

Part B: Q.11 to Q.15 attempt any four questions (4 X 5 Marks = 20 Marks)
Short Notes

Q11. Explain the four-level model of the healthcare system.

Q12. Explain the six major facility zones in Hospitals.

Q13. Difference between positive pressure and negative pressure rooms. Write the differential points.

Q14. In the pursuit of creating truly patient-focused hospitals, how can healthcare institutions reconcile the often-conflicting priorities of operational efficiency, standardized care protocols, and the need for personalized, compassionate patient experiences without compromising clinical outcomes or financial sustainability? (Be brief)

Q15. In the context of hospital laboratories where diagnostic accuracy and turnaround time are critical, how can Total Quality Management principles be effectively implemented to drive continuous improvement without disrupting workflow, overburdening staff, or compromising the reliability of results? (Be brief)

Part C: From Q.16 to Q.19, attempt any three questions (3 X 10 Marks = 30 Marks)
Long Notes

Q16. How can hospitals balance the high cost and space requirements of implementing LDRP suites with the need to ensure equitable access to quality maternal care across diverse socioeconomic populations, especially in resource-constrained settings? (Discuss)

Q17. Case Study: "The Critical Delay – A Crisis in Lab Services

City Care Hospital is a 500-bed multi-specialty institution known for its advanced diagnostics and patient-centered care. However, over the past three months, the hospital's laboratory has been facing increasing complaints from both clinicians and patients regarding delayed test results, discrepancies in reports, and inconsistent communication. An internal audit revealed that while the lab is well-equipped with automated analyzers and staffed with qualified personnel, it lacks a robust quality management system. There is no standardized protocol for sample handling during peak hours, and result verification processes are inconsistently followed. Moreover, staff morale is low due to the high workload and lack of recognition.

Key Data:

- Daily average sample volume: 1,200
- Lab staff: 25 (technicians and pathologists)
- Average turnaround time (TAT) for routine tests: 6–8 hours (target: 3–4 hours)
- The error rate in reports (last quarter): 2.7% (industry benchmark: <1%)
- Staff satisfaction score (survey): 3.1/5

Questions:

1. What are the key systemic issues contributing to the failure in lab service delivery?
2. How can Total Quality Management (TQM) principles be applied to redesign the laboratory workflow and improve quality outcomes?
3. What short-term and long-term strategies should the hospital adopt to rebuild clinician trust and ensure patient safety?
4. How would you prioritize investments between new technologies, staff training, and process redesign?
5. In the event of another critical failure, who should be held accountable, and how should accountability be balanced with a culture of safety and learning?

Q18. Case Study: "The Scarcity Dilemma – Crisis at the Blood Bank"

Global Care Hospital is a 700-bed tertiary care center with a Level 1 trauma unit and a high-volume oncology department. Its in-house blood bank is a critical lifeline, operating 24/7 to support surgeries, cancer treatments, emergency transfusions, and obstetric care. Over the past month, the hospital has faced an acute shortage of blood components, particularly platelets and O-negative blood. Donation drives have declined, the staff is overstretched, and there are increasing reports of near-miss events involving blood mismatches, delayed cross-matching, and transfusions being postponed or redirected to external centers. An internal review revealed that the blood bank lacks a digital inventory management system, depends heavily on manual documentation, and follows outdated donor recruitment and retention strategies. A recent complaint from the family of a trauma patient—who died while awaiting an urgent transfusion—sparked public attention and an inquiry from the hospital's ethics committee. Amid rising demand, the blood bank director is forced to make a tough call—prioritize available O-negative units for a VIP patient scheduled for elective surgery or reserve them for unpredictable emergency admissions. Meanwhile, staff are demoralized, processes are error-prone, and trust in the blood bank is eroding across departments.

Key Data:

- Average monthly demand: 2,800 units
- Average monthly supply: 2,100 units
- Critical shortage: O-negative and platelets
- Near-miss transfusion incidents (last quarter): 7
- Digital inventory system: Not implemented
- Donor repeats rate: 22% (industry best practice: >50%)
- Staff burnout index: High (based on a recent survey)

Questions:

1. What are the systemic and leadership failures contributing to the current crisis in the blood bank?
2. How should the hospital ethically prioritize limited blood resources between elective procedures and emergency care?
3. What role should technology, data analytics, and real-time tracking play in modernizing blood bank operations?

4. How can the hospital design a sustainable donor engagement model that ensures long-term blood supply resilience?
5. If a patient's death is linked to blood bank delays, what should the hospital's response be in terms of accountability, transparency, and policy reform?

Q19. Case Study: "Blindsided – A Breakdown in Radiology"

Bright Hope Medical Center, a 650-bed teaching hospital, prides itself on having a technologically advanced Radiology Department with state-of-the-art imaging equipment, including 3T MRI, PET-CT, and AI-assisted diagnostics. The department manages over 300 imaging procedures daily, ranging from routine X-rays to high-complexity interventional radiology. Recently, a 42-year-old woman with a history of breast cancer underwent a CT scan at Bright Hope for ongoing back pain. The scan was read as "normal." Three months later, she was diagnosed at another hospital with widespread spinal metastases that were visible on the original scan but were missed in the initial report. The case triggered a legal suit, public media attention, and an internal investigation. The Radiology Department is now under scrutiny. The error has raised questions about reporting accuracy, the overreliance on junior residents for primary reads, time pressures on consultants, and inadequate double-reading protocols. Simultaneously, there's internal debate over integrating AI tools for preliminary screenings—while some see it as a solution, others fear it might depersonalize diagnostic judgment or shift accountability. The hospital administration is caught between managing public perception, legal consequences, internal reform, and a divided department culture.

Key Data:

- Daily imaging workload: 300+ studies
- Average reporting time: 24–48 hours
- Double-reading policy: Only for high-risk cases
- Radiologist-to-study ratio: 1:50 per day
- Number of missed diagnosis complaints (last year): 11
- AI diagnostic tools: Pilot stage (limited usage)
- Staff feedback: High burnout, poor interdisciplinary communication

Questions:

1. What systemic and process-level gaps contributed to the missed diagnosis in this case?
2. How can the hospital strike a balance between speed, volume, and accuracy in radiology reporting?
3. Should AI be made mandatory for all primary screenings, or should human expertise remain the standard? Why and how?
4. What ethical and legal responsibilities does the hospital owe to the patient and her family—and how should it respond publicly and operationally?
5. What long-term changes in workflow, staffing, and quality control are essential to restore trust in the Radiology Department and improve diagnostic safety?