MALLA REDDY VISHWAVIDYAPEETH
(Deemed to be University)
Hyderabad

School of Nursing Science and Technology

FELLOWSHIP IN
NURSING INFORMATICS AND TECHNOLOGY

Curriculum 2026

Programme particulars	
Level	Post-registration fellowship (nursing)
Duration	26 weeks (6 months) – 1,000 hours
Structure	Theory 100 h · Simulation laboratory 60 h · Clinical practice 840 h
Eligibility	Registered B.Sc Nursing / M.Sc Nursing in India, or equivalent
Award	Fellowship certificate of Malla Reddy Vishwavidyapeeth

Approved Curriculum by the Board of Studies, Academic Council and Executive Council

Stage	Body	Date of approval / resolution no.
1	Board of Studies Nursing – School of Nursing Sciences & Technology	
2	Academic Council	
3	Executive Council	

Contents

1. Preamble and Need for the Programme .....
2. Vision, Mission and Programme Objectives .....
3. Programme at a Glance .....
4. Eligibility, Selection and Governance .....
5. Programme Outcomes .....
6. Curriculum Framework .....
7. Detailed Syllabus: Nursing Informatics and Technology .....
8. Clinical Practice: Postings (840 hours) .....
9. Essential Nursing Informatics and Technology Skills and Logbook .....
10. Scheme of Assessment .....
11. Infrastructure, Faculty and Quality Assurance .....
12. Suggested References .....
Annexure A: Final Assessment Sheet – MRV Fellowship .....
Annexure B: Logbook Formats .....
Annexure C: Certificate of Completion (format) .....

1. Preamble and Need for the Programme

Malla Reddy School of Nursing Science and Technology recognizes the growing importance of nursing informatics and technology in improving healthcare delivery, patient safety, clinical decision-making and nursing education. The integration of digital technologies into healthcare requires nurses to develop competencies in electronic health records, healthcare information systems, digital documentation, telehealth and data management.

This Fellowship programme is designed to equip nurses with the knowledge and skills required to use information technology effectively in clinical practice, nursing administration, education and research. It emphasizes digital health applications, health information management, data security, ethical use of technology and emerging innovations in healthcare to promote safe, efficient and evidence-based nursing practice.

1.1 Need

- The increasing use of electronic health records, digital health platforms, telemedicine and healthcare information systems requires nurses to develop specialized competencies in nursing informatics and technology.
- Basic nursing programmes provide foundational knowledge of healthcare technology, but additional structured training is needed in digital documentation, clinical information systems, data management, cyber security and technology-assisted patient care.
- Hospitals and healthcare institutions require nurses who can use digital tools effectively, maintain accurate electronic records, support clinical decision-making, protect patient information and contribute to the implementation and evaluation of healthcare technologies.

2. Vision, Mission and Programme Objectives

2.1 Vision

To prepare competent nursing informatics professionals who integrate digital technologies into nursing practice to enhance patient safety, healthcare quality, clinical decision-making and evidence-based care.

2.2 Mission

- Provide competency-based training in nursing informatics, electronic health records, digital health technologies, telehealth and healthcare information systems.
- Promote safe, ethical and effective use of technology in nursing practice, education, administration and research while ensuring patient privacy and data security.
- Develop clinical, analytical, communication and leadership skills to support digital healthcare implementation, improve nursing workflows and enhance the quality of patient care.

2.3 Programme objectives

At the end of the Fellowship in Nursing Informatics and Technology, the learner will be able to:

1. Demonstrate knowledge and skills in nursing informatics, healthcare information systems and digital health technologies.
2. Use electronic health records and digital documentation systems accurately and effectively in nursing practice.
3. Apply digital tools and clinical information systems to support clinical decision-making, patient safety and evidence-based nursing care.

4. Demonstrate competency in telehealth, telemedicine and technology-assisted patient monitoring within the scope of nursing practice.
5. Apply principles of data management, healthcare data analysis and information retrieval to support clinical practice, education and research.
6. Maintain patient confidentiality and ensure ethical handling, privacy and security of electronic health information.
7. Participate in the implementation, evaluation and improvement of digital healthcare systems in collaboration with healthcare professionals and information technology teams.
8. Promote continuous professional development and the responsible adoption of emerging technologies, including artificial intelligence and digital innovations, in nursing practice.

3. Programme at a Glance

Item	Details
Name of the programme	Fellowship in Nursing Informatics and Technology
Offered by	School of Nursing Science and Technology, Malla Reddy Vishwavidyapeeth (Deemed to be University)
Duration	26 weeks (6 months), full time
Total hours	Total-1,000 Hrs: Theory-100 Hrs, Simulation laboratory-60 Hrs, Clinical practice-840 Hrs
Credits	33 (at 30 notional hours per credit; 1,000 h ÷ 30 = 33.3, rounded down)
Eligibility	Registered B.Sc Nursing / M.Sc Nursing in India, or equivalent
Mode	Contact classes, simulation, supervised clinical postings in a teaching hospital, logbook
Assessment	MCQ 25 + practical skills (three case scenarios) 60 + logbook 15 = 100 marks; minimum 50% in each component and 50% aggregate
Award	Fellowship certificate by Malla Reddy Vishwavidyapeeth (Deemed to be University)
Medium of instruction	English

4. Eligibility, Selection and Governance

4.1 Eligibility

- Registered B.Sc Nursing or M.Sc Nursing in India, or equivalent qualification.
- Current registration with a State Nursing Council (certificate to be produced at admission).
- Medical fitness certificate and immunization record (hepatitis B at minimum).

4.2 Selection and commencement

The fellowship is established to uphold transparency, fairness and meritocracy in the selection process for the MRV Fellowship Programme. Selection is made by the Fellowship Committee on the basis of academic record, a short interview and document verification. A batch commences once the committee has approved the list of fellows and allotted a guide to each fellow.

4.3 Fellowship Committee

Sl. No.	Role / position	Description / designation
1	Chairperson	The Dean, SNST
2	Subject expert	Dean MRCON, Professor or Associate Professor of SNST
3	Guide / co-guide	Professor, Associate Professor or Assistant Professor from SNST
4	Convener	The Fellowship Coordinator of MRV

Sl. No.	Role / position	Description / designation
5	Ex officio members	The Registrar and the Controller of Examinations, MRV

Functions of the committee: Approval of the curriculum and any additional outputs or deliverables, with prior written approval; selection of fellows; allotment of guides; monitoring of attendance, logbooks and clinical postings; conduct of final assessment; handling of grievances; and recommendation for the award of the fellowship certificate.

4.4 Guides

- Guide / Co-guide: Professor, Associate Professor or Assistant Professor from SNST with a postgraduate qualification in nursing and relevant experience in nursing informatics, digital health or healthcare technology.
- Technical / Clinical Preceptors: Healthcare professionals or IT specialists with relevant experience in electronic health records, healthcare information systems, telehealth, digital documentation or clinical technology implementation.
- Guide-to-fellow ratio: Not more than 1:1.

5. Programme Outcomes

5.1 Programme outcomes (POs)

At the end of the fellowship the fellow demonstrates the following programme outcomes.

PO	Domain	Programme outcome
PO1	Knowledge	Explains the principles of nursing informatics, healthcare information systems, digital health technologies and their applications in nursing practice.
PO2	Digital Documentation	Uses electronic health records and digital documentation systems accurately to maintain patient records and support continuity of care.
PO3	Clinical Decision Support	Applies digital tools and clinical information systems to support clinical decision-making, patient safety and evidence-based nursing practice.
PO4	Telehealth and Technology	Demonstrates appropriate use of telehealth, telemedicine and technology-assisted patient monitoring within the scope of nursing practice.
PO5	Data Management, Privacy and Ethics	Applies principles of healthcare data management, information security, patient confidentiality, ethical technology use and responsible handling of electronic health information.
PO6	Leadership and Innovation	Participates in the implementation, evaluation and improvement of digital healthcare systems and promotes the responsible adoption of emerging technologies in nursing practice.

6. Curriculum Framework

6.1 Distribution of hours

Unit	Title	Theory (h)	Simulation lab (h)
I	Introduction to Computers and Nursing Informatics	10	4
II	Applications of Computers and Technology in Nursing Practice	10	8
III	Principles of Health Informatics	5	4
IV	Healthcare Information Systems	10	6
V	Shared Care and Electronic Health Records	10	8
VI	Patient Safety and Clinical Risk	5	4
VII	Clinical Knowledge and Decision-Making	10	6

Unit	Title	Theory (h)	Simulation lab (h)
VIII	eHealth: Patients and the Internet	10	6
IX	Using Information in Healthcare Management	10	6
X	Information Law and Governance in Clinical Practice	10	4
XI	Healthcare Quality and Evidence-Based Practice	10	4
Total		**100**	**60**

Component	Hours	Share
Theory (8 units)	100	10%
Simulation laboratory	60	6%
Clinical practice (postings)	840	84%
Total	**1,000**	**100%**

Average weekly load over 26 weeks: about 4 hours of theory, 2 hours of simulation and 32 hours of clinical practice (about 38 hours a week).

6.2 Schedule of the 26 weeks

Weeks	Activity
1–2	Orientation to nursing informatics, computer applications, digital health, information security, basic computer skills and introduction to electronic health records.
3–20	Supervised training in hospital information systems, clinical information systems, electronic health records, nursing information systems, healthcare data management, statistical applications, clinical terminology, eHealth and digital documentation.
21–25	Advanced practice in clinical decision support, patient safety, information governance, healthcare data analysis, evidence-based practice, digital health projects, case presentations and logbook completion.
26	Final competency assessment, practical examination, project or case presentation, logbook verification and exit examination.

6.3 Teaching–learning methods

- Interactive lectures, presentations, videos and case-based discussions on nursing informatics and digital health.
- Computer laboratory sessions on operating systems, MS Word, Excel, PowerPoint, internet applications and digital documentation.
- Demonstrations and supervised practice using simulated electronic health records, hospital information systems and nursing information systems.
- Practical exercises in healthcare data entry, analysis, interpretation and presentation.
- Guided literature searches using electronic databases and online academic resources.
- Demonstrations of clinical terminology and classification systems, including SNOMED CT, ICD-10-CM, NANDA, NOC and the Omaha System.
- Case discussions and role play on patient safety, clinical risk, confidentiality, ethical and legal issues, and information governance.
- Demonstrations of eHealth, telehealth, public health informatics and technology-assisted patient care.
- Visits to hospital IT or health informatics departments, where available, to observe the practical application of information systems.
- Group discussions, seminars, assignments and case studies on healthcare quality and evidence-based practice.

- Preparation of healthcare data reports, digital health education materials and informatics-based quality improvement projects.
- Maintenance of a practical logbook, reflective learning, mentor feedback and competency-based assessments.

7. Detailed Syllabus: Fellowship in Nursing Informatics and Technology

Theory 100 hours · Simulation laboratory 60 hours · Clinical practice 840 hours

For every unit the syllabus gives the learning objectives, content, teaching–learning activities, assessment methods and course outcomes (CO).

Unit I: Introduction to Computers and Nursing Informatics

Theory: 10 hours · Simulation/Skills Laboratory: 4 hours

Learning objectives

- Describe the importance of computers and technology in patient care and nursing practice.
- Explain the applications of computers in nursing education, administration, research and clinical practice.
- Demonstrate basic computer skills relevant to nursing activities.

Content

Introduction to computers

- Definition, characteristics, types and basic components of computers.
- Hardware, software, input and output devices, and data storage.
- Operating systems and basic computer operations.
- Introduction to computer networks and internet applications.

Applications of computers in nursing

- Use of computers in nursing education, teaching and learning.
- Computer applications in nursing practice and patient care.
- Use of technology in nursing administration and research.
- Benefits and limitations of computer-based healthcare applications.

Teaching–learning activities

Interactive lectures, demonstrations of computer components, guided computer practice, group discussions, videos, basic computer exercises.

Assessment methods

MCQ test, short-answer questions, practical skills checklist, oral questions, assignment assessment.

Course outcomes (CO)

CO	Course outcome: the fellow will be able to
CO1	Explain the basic concepts, components and functions of computers.
CO2	Describe the importance of computers and technology in nursing practice and patient care.
CO3	Identify applications of computers in nursing education, administration and research.
CO4	Demonstrate basic computer operations relevant to nursing activities.

Unit II: Applications of Computers and Technology in Nursing Practice

Theory: 10 hours · Simulation/Skills Laboratory: 8 hours

Learning objectives

- Demonstrate the use of computer applications in nursing practice, education, administration and research.
- Use office applications for nursing documentation, presentations and data management.
- Explain the use of internet resources, literature searches, statistical packages and hospital information systems.

Content

Computer applications in nursing practice

- Windows operating system and file management.
- MS Office applications: Word, Excel and PowerPoint.
- Internet use, email and online communication.
- Electronic literature searches and academic databases.
- Introduction to statistical packages and healthcare data analysis.
- Hospital Management Information System (HMIS).
- Introduction to electronic health records (EHRs) and digital nursing documentation.

Practical applications

- Preparing nursing reports and clinical presentations.
- Creating spreadsheets and entering healthcare data.
- Retrieving and organizing digital information.
- Using authorised or simulated electronic health record systems.
- Introduction to data analysis with guidance from a qualified statistician.

Teaching–learning activities

Lectures; computer demonstrations; supervised computer practice; literature search exercises; simulated EHR practice; data entry and analysis exercises.

Assessment methods

Practical examination; skills checklist; computer-based assignments; assessment of reports and presentations; literature search exercise.

Course outcomes (CO)

CO	Course outcome: the fellow will be able to
CO1	Use office applications for nursing documentation, reports and presentations.
CO2	Conduct basic online literature searches using appropriate academic resources.
CO3	Demonstrate basic data entry, spreadsheet preparation and data analysis skills.
CO4	Use simulated or authorized digital healthcare systems for nursing-related activities.

Unit III: Principles of Health Informatics

Theory: 5 hours · Simulation/Skills Laboratory: 4 hours

Learning objectives

- Describe the principles, needs, objectives and limitations of health informatics.
- Differentiate between data, information and knowledge in healthcare.
- Explain how health informatics supports effective healthcare delivery and decision-making.

Content

Fundamentals of health informatics

- Definition, scope and development of health informatics.
- Need, objectives, benefits and limitations of health informatics.

- Relationship between nursing informatics, health informatics and healthcare information technology.
- Role of nurses in health informatics.

Data, information and knowledge

- Concepts of data, information, knowledge and evidence.
- Transformation of raw data into meaningful healthcare information.
- Use of information to support clinical decisions and improve healthcare outcomes.
- Introduction to information quality, accuracy, completeness and reliability.

Teaching–learning activities

Interactive lectures; discussions; practical exercises using sample healthcare data; case studies; data-to-information activities.

Assessment methods

Essay questions; short-answer questions; MCQ test; oral questions; practical exercise.

Course outcomes (CO)

CO	Course outcome: the fellow will be able to
CO1	Explain the principles, scope and objectives of health informatics.
CO2	Differentiate between data, information and knowledge in healthcare.
CO3	Describe the benefits and limitations of health informatics.
CO4	Explain how health information supports clinical decision-making and healthcare improvement.

Unit IV: Healthcare Information Systems

Theory: 10 hours · Simulation/Skills Laboratory: 6 hours

Learning objectives

- Describe the role and architecture of information systems in healthcare.
- Explain the functions of Clinical Information Systems (CIS) and Hospital Information Systems (HIS).
- Demonstrate basic use of healthcare information systems in simulated or authorised settings.

Content

Healthcare information systems

- Definition, purpose and components of healthcare information systems.
- Basic architecture of healthcare information systems.
- Hospital Information System (HIS) and Clinical Information System (CIS).
- Registration, admission, discharge and transfer systems.
- Laboratory, pharmacy, radiology and nursing information systems.
- Patient appointment scheduling and clinical documentation.
- Interdepartmental communication and information sharing.
- Benefits and challenges of implementing healthcare information systems.

Role of nurses

- Accessing and updating patient information within authorised roles.
- Using digital systems for nursing documentation and care coordination.
- Identifying common system errors and reporting technical issues.
- Maintaining accuracy and confidentiality of patient information.

Teaching–learning activities

Lectures; demonstrations; simulated HIS/CIS practice; case discussions; system workflow exercises; observation visits to the hospital IT or informatics department.

Assessment methods

Essay questions; short-answer questions; MCQ test; practical skills checklist; system workflow exercise

Course outcomes (CO)

CO	Course outcome: the fellow will be able to
CO1	Explain the role and components of healthcare information systems.
CO2	Differentiate between Clinical Information Systems and Hospital Information Systems.
CO3	Demonstrate basic use of simulated or authorised healthcare information systems.
CO4	Explain the role of nurses in accurate documentation, information sharing and system safety.

Unit V: Shared Care and Electronic Health Records

Theory: 10 hours · Simulation/Skills Laboratory: 8 hours

Learning objectives

- Explain the role of electronic health records in nursing practice and continuity of care.
- Describe challenges associated with capturing and sharing comprehensive patient histories.
- Explain the importance of interoperability and standards in electronic health records.
- Demonstrate basic electronic documentation using a simulated EHR system.

Content

Electronic health records

- Definition, objectives, components and types of electronic health records.
- Electronic medical records and electronic health records.
- Nursing assessment, nursing diagnoses, care plans, interventions and evaluation in EHRs.
- Recording vital signs, medication administration, procedures and clinical observations.
- Documentation of patient history, allergies and ongoing treatment.
- Advantages and limitations of electronic health records.

Shared care and interoperability

- Sharing patient information across healthcare settings.
- Continuity of care and multidisciplinary communication.
- Challenges in capturing comprehensive patient histories in a structured format.
- Interoperability and integration of information from different healthcare systems.
- Introduction to healthcare information standards and terminology.
- Patient identification, data accuracy, access control and confidentiality.
- Prevention of duplicate records and documentation errors.

Teaching–learning activities

Lectures; simulated EHR demonstrations; digital nursing documentation exercises; case-based learning; shared-care scenarios; practical sessions on structured patient records.

Assessment methods

Essay questions; short-answer questions; MCQ test; simulated EHR practical examination; documentation checklist; case-based assessment.

Course outcomes (CO)

CO	Course outcome: the fellow will be able to

CO	Course outcome: the fellow will be able to
CO1	Explain the role and importance of electronic health records in nursing practice.
CO2	Demonstrate accurate nursing documentation using a simulated EHR system.
CO3	Describe the principles of interoperability and information sharing in healthcare.
CO4	Identify common EHR documentation challenges and apply measures to maintain data accuracy and confidentiality.

Unit VI: Patient Safety and Clinical Risk

Theory: 5 hours · Simulation/Skills Laboratory: 4 hours

Learning objectives

- Describe the relationship between health informatics and patient safety.
- Identify risks associated with the use of digital healthcare systems.
- Explain the role of clinical risk management in preventing errors and improving care.
- Describe measures to improve the safe use of healthcare technology.

Content

Patient safety and informatics

- Concepts of patient safety, clinical risk and risk management.
- Relationship between health informatics and patient safety.
- Use of clinical decision support systems and electronic alerts.
- Identification of medication errors, patient identification errors and documentation errors.
- Risks associated with incomplete, inaccurate or delayed electronic documentation.
- Technology-related risks, including alert fatigue and system downtime.

Clinical risk management

- Steps in the risk management process: identification, assessment, control and evaluation.
- Incident reporting and documentation.
- Use of digital systems for safety alerts and adverse-event reporting.
- Strategies to prevent errors associated with electronic healthcare systems.
- Contingency procedures during system failure or downtime.
- Role of nurses in maintaining safe digital healthcare practices.

Teaching–learning activities

Lectures; case discussions; simulated patient safety scenarios; incident reporting exercises; demonstrations of safety alerts; group problem-solving.

Assessment methods

Essay questions; short-answer questions; MCQ test; case-based assessment; incident reporting exercise; practical checklist.

Course outcomes (CO)

CO	Course outcome: the fellow will be able to
CO1	Explain the relationship between health informatics and patient safety.
CO2	Identify common clinical and technology-related risks in digital healthcare systems.
CO3	Describe the steps involved in clinical risk management and incident reporting.
CO4	Apply appropriate measures to support safe use of healthcare information systems.

Unit VII: Clinical Knowledge and Decision-Making

Theory: 10 hours · Simulation/Skills Laboratory: 6 hours

Learning objectives

- Explain the importance of knowledge management in clinical practice and healthcare policy.
- Describe the use of standardized clinical terminology and classification systems.
- Explain how clinical information supports decision-making and communication.
- Demonstrate the use of standardized terminology in simulated nursing documentation.

Content

Clinical knowledge management

- Definition, concepts and importance of knowledge management in healthcare.
- Collection, organisation, storage, retrieval and sharing of clinical knowledge.
- Use of clinical knowledge to support nursing decisions and healthcare policy.
- Clinical decision support systems and evidence-based clinical pathways.
- Benefits and limitations of knowledge management systems.

Standardized terminology and classification

- Importance of standardized terminology in healthcare documentation.
- Introduction to Systematized Nomenclature of Medicine – Clinical Terms (SNOMED CT).
- Overview of mapping between SNOMED CT and ICD-10-CM.
- Introduction to standardized nursing terminologies:
    - North American Nursing Diagnosis Association International (NANDA-I).
    - Nursing Outcomes Classification (NOC).
    - Omaha System.
- Use of standardized terminology in nursing assessment, diagnosis, interventions and outcomes.
- Benefits of standardization for communication, data analysis and continuity of care.

Teaching–learning activities

Lectures; discussions; terminology demonstrations; simulated nursing documentation; case studies; observation visits to health informatics departments where available.

Assessment methods

Essay questions; short-answer questions; MCQ test; practical terminology exercise; case-based assessment; assignment.

Course outcomes (CO)

CO	Course outcome: the fellow will be able to
CO1	Explain the role of knowledge management in clinical decision-making and healthcare policy.
CO2	Describe the purpose of standardized clinical terminology and classification systems.
CO3	Identify the applications of SNOMED CT, ICD-10-CM, NANDA-I, NOC and the Omaha System.
CO4	Demonstrate basic use of standardized nursing terminology in simulated clinical documentation.

Unit VIII: eHealth – Patients and the Internet

Theory: 10 hours · Simulation/Skills Laboratory: 6 hours

Learning objectives

- Explain the role of information and communication technology in patient care.
- Describe the applications of eHealth and digital health services.
- Explain the role of nurses in public health informatics and digital patient education.
- Identify the benefits, limitations and risks of internet-based health information.

Content

eHealth and digital health

- Definition, scope and objectives of eHealth.
- Use of information and communication technology in healthcare delivery.
- Telehealth, telemedicine and remote patient monitoring.
- Digital health applications, patient portals and online health services.
- Electronic communication between patients and healthcare professionals.
- Use of technology in health promotion, disease prevention and follow-up care.

Patients and the internet

- Online health information and patient education.
- Evaluating the accuracy and reliability of online health resources.
- Health literacy and digital literacy.
- Privacy and security concerns in online healthcare communication.
- Responsible use of digital health platforms and social media.

Public health informatics

- Introduction to public health informatics.
- Digital disease surveillance and health information reporting.
- Use of technology in health promotion and community health programmes.
- Role of nurses in digital public health education and communication.

Teaching–learning activities

Lectures; demonstrations of eHealth platforms; telehealth case discussions; digital patient education exercises; evaluation of online health resources; group presentations.

Assessment methods

Essay questions; short-answer questions; MCQ test; practical examination; digital health education assignment; case-based assessment.

Course outcomes (CO)

CO	Course outcome: the fellow will be able to
CO1	Explain the applications of eHealth and information and communication technology in patient care.
CO2	Describe the role of telehealth, digital health applications and remote monitoring in healthcare delivery.
CO3	Evaluate the reliability of online health information and identify potential risks.
CO4	Explain the role of nurses in public health informatics and digital patient education.

Unit IX: Using Information in Healthcare Management

Theory: 10 hours · Simulation/Skills Laboratory: 6 hours

Learning objectives

- Describe the components and functions of a Nursing Information System (NIS).
- Explain how healthcare data are collected, analyzed and presented for management decisions.
- Demonstrate basic interpretation of healthcare data using simulated information systems.
- Explain the role of information systems in improving healthcare organisation and service delivery.

Content

Nursing Information System

- Definition, objectives and components of a Nursing Information System.
- Nursing documentation, patient care planning and workload management.
- Integration of nursing information with hospital information systems.
- Role of nursing information systems in clinical practice and administration.

Healthcare data management

- Sources and types of healthcare data.
- Data collection, entry, validation, storage and retrieval.
- Data quality: accuracy, completeness, consistency and timeliness.
- Basic statistical summaries and interpretation of healthcare data.
- Use of tables, charts, graphs and dashboards.
- Indicators for nursing workload, patient outcomes and quality of care.
- Use of data in staffing, resource allocation, performance monitoring and service planning.
- Confidentiality and authorised access to management information.

Teaching–learning activities

Lectures; discussions; demonstrations of simulated NIS software; healthcare data entry exercises; spreadsheet and dashboard practice; data interpretation case studies.

Assessment methods

Essay questions; short-answer questions; MCQ test; practical data analysis; simulated NIS assessment; assignment involving healthcare data presentation.

Course outcomes (CO)

CO	Course outcome: the fellow will be able to
CO1	Explain the components and functions of a Nursing Information System.
CO2	Describe the processes of healthcare data collection, validation, analysis and presentation.
CO3	Interpret basic healthcare data to support clinical and administrative decisions.
CO4	Explain how nursing information systems support resource management and quality monitoring

Unit X: Information Law and Governance in Clinical Practice

Theory: 10 hours · Simulation/Skills Laboratory: 4 hours

Learning objectives

- Describe ethical and legal issues related to healthcare informatics.
- Explain the importance of patient confidentiality, privacy and information security.
- Identify potential risks associated with unauthorized access, disclosure and misuse of health information.
- Apply appropriate ethical and professional principles when handling electronic health records.

Content

Ethical and legal aspects of healthcare informatics

- Principles of ethics in digital healthcare.
- Patient privacy, confidentiality and informed consent.
- Access control, user authentication and secure handling of patient records.
- Legal and professional responsibilities in electronic documentation.
- Data ownership, sharing, retention and authorised disclosure.
- Documentation integrity, audit trails and accountability.
- Risks of unauthorized access, data breaches and cyber attacks.

- Safe use of email, messaging applications and social media in professional practice.

Information governance and security

- Principles of healthcare information governance.
- Password security, access permissions and secure log-in practices.
- Recognition and reporting of suspected data breaches.
- Safe use of digital devices and removable storage.
- Ethical use of artificial intelligence and digital decision support.
- Overview of applicable Indian laws, regulations and institutional policies governing digital personal data and health information.
- Role of nurses in protecting patient information and maintaining professional standards.

Teaching–learning activities

Lectures; discussions; case-based learning; role play; confidentiality scenarios; simulated data breach reporting; exercises on safe digital practices.

Assessment methods

Essay questions; short-answer questions; MCQ test; case-based assessment; role-play evaluation; information security checklist.

Course outcomes (CO)

CO	Course outcome: the fellow will be able to
CO1	Explain ethical and legal responsibilities associated with healthcare informatics.
CO2	Describe the principles of patient privacy, confidentiality and information security.
CO3	Identify potential risks involving unauthorized access, disclosure and misuse of health information.
CO4	Demonstrate responsible and ethical handling of electronic health information in accordance with applicable policies.

Unit XI: Healthcare Quality and Evidence-Based Practice

Theory: 10 hours · Simulation/Skills Laboratory: 4 hours

Learning objectives

- Explain the importance of evidence-based practice in improving healthcare quality.
- Describe the role of scientific evidence and informatics standards in nursing practice.
- Identify relevant digital resources for accessing and evaluating scientific evidence.
- Explain how information technology supports quality improvement and professional nursing practice.

Content

Evidence-based practice

- Definition, principles and importance of evidence-based practice.
- Formulating clinical questions and identifying information needs.
- Literature searching using electronic databases and academic resources.
- Evaluating the quality, relevance and reliability of research evidence.
- Applying research findings to nursing practice and patient care.

Healthcare quality and informatics standards

- Concepts and indicators of healthcare quality.
- Use of digital data to monitor nursing performance and patient outcomes.
- Clinical documentation standards and data quality.
- Role of information systems in clinical audits and quality improvement.

- Introduction to interoperability and relevant healthcare informatics standards.
- Use of digital tools in nursing research and evidence dissemination.
- Emerging developments in healthcare technology, including artificial intelligence and decision support.
- Continuous professional development in nursing informatics.

Teaching–learning activities

Lectures; discussions; case studies; literature search exercises; critical appraisal of research articles; quality improvement activities; group presentations.

Assessment methods

Essay questions; short-answer questions; MCQ test; literature search assignment; research appraisal; case study; quality improvement presentation.

Course outcomes (CO)

CO	Course outcome: the fellow will be able to
CO1	Explain the principles and importance of evidence-based nursing practice.
CO2	Retrieve and evaluate relevant scientific evidence using digital information resources.
CO3	Describe how healthcare informatics supports quality monitoring, clinical audits and improvement initiatives.
CO4	Explain the importance of informatics standards, data quality and continuous professional development in nursing.

8. Clinical Practice: Postings (840 hours)

Clinical area	Weeks	Hours
Hospital IT Department / Health Informatics Unit	4	140
Medical and Surgical Wards – Digital Nursing Documentation	4	140
Intensive Care Units – Clinical Information Systems and Patient Monitoring	4	140
Electronic Health Records and Nursing Information Systems	3	100
Hospital Information System Departments (Registration, Laboratory, Pharmacy and Radiology)	3	100
Healthcare Data Management and Statistical Analysis	2	60
Telehealth, eHealth and Digital Patient Education	2	60
Information Security, Data Privacy and Governance	2	60
Healthcare Quality, Informatics Audit and Evidence-Based Practice	2	40
Total	**26**	**84**

Postings may be arranged according to hospital schedules, available digital infrastructure and clinical learning opportunities. Orientation to the hospital IT department and available health information systems should begin in Week 1. The sequence of subsequent postings may be adjusted to support progressive competency development.

These postings account for 840 clinical and technical practice hours. Theory and simulation/skills laboratory hours are additional, bringing the proposed programme total to 1,000 hours.

Each posting must conclude with a guide-verified competency assessment and sign-off in the clinical logbook. Access to actual patient information and hospital systems must be authorised and comply with institutional policies.

8.1 Expected learning in each posting

Posting	Focus
Hospital IT Department / Health Informatics Unit	Understand hospital information systems, system architecture, user access, technical support, system maintenance and the role of IT professionals in healthcare delivery.
Medical and Surgical Wards	Practice electronic nursing documentation, patient assessment recording, care planning, nursing interventions and shift handover using authorised or simulated systems.
Intensive Care Units	Understand digital patient monitoring, electronic recording of vital signs, clinical alerts, critical care documentation and the use of information systems to support patient safety.
Electronic Health Records and Nursing Information Systems	Practice patient registration, record retrieval, nursing assessment, care plans, medication documentation and continuity of care using simulated or authorised systems.
Hospital Information System Departments	Understand information flow across registration, laboratory, pharmacy, radiology and other hospital departments; observe interdepartmental communication and data integration.
Healthcare Data Management and Statistical Analysis	Collect, validate, organize and analyze authorised or anonymised healthcare data; prepare tables, graphs, reports and basic statistical summaries.
Telehealth, eHealth and Digital Patient Education	Understand teleconsultations workflows, remote monitoring, patient portals, digital health education and communication with patients through approved platforms.
Information Security, Data Privacy and Governance	Apply access control, confidentiality, secure log-in practices, safe data handling, incident reporting and institutional information governance procedures.
Healthcare Quality, Informatics Audit and Evidence-Based Practice	Evaluate documentation quality, review data completeness, participate in informatics-related audits and use digital resources to support evidence-based practice and quality improvement.

9. Essential Emergency and Trauma Care Skills and Logbook

The fellow must maintain a clinical and technical logbook documenting all informatics-related activities observed, assisted with or performed. Each entry must be signed by the clinical or technical preceptor and verified by the programme guide.

The following minimum numbers are proposed competency targets for the 840 practice hours. Activities may be performed using simulated systems where live access is unavailable or inappropriate. Actual patient data must not be copied into personal devices or unauthorised records.

9.1 Procedures observed (O)

No.	Procedure	Min.
1	Hospital IT / Health Informatics Unit orientation and workflow review	2
2	Electronic health record workflow and clinical documentation review	5
3	Hospital Information System workflow across departments	3

No.	Procedure	Min.
4	Nursing Information System demonstration and workflow review	3
5	Digital patient monitoring and clinical alert review	5
6	Healthcare data quality review or informatics audit	3
7	System access control, user authentication and information security procedures	3
8	Telehealth or digital patient consultation workflow	2
9	Healthcare data analysis, dashboard or reporting demonstration	3
10	Informatics-related quality improvement or evidence-based practice meeting	2

9.2 Procedures assisted (A)

No.	Procedure	Min.	Sim
1	Patient registration and demographic data entry	5	Yes, if needed
2	Electronic nursing assessment and documentation	5	Yes, if needed
3	Digital nursing care plan preparation	5	Yes
4	Recording vital signs and clinical observations in an authorised system	5	Yes, if needed
5	Electronic medication documentation workflow	3	Yes
6	Retrieval of patient records according to authorised access	5	Yes, if needed
7	Data entry, validation and spreadsheet preparation	5	Yes
8	Literature search using electronic databases	3	Yes, if needed
9	Healthcare data analysis using spreadsheet or statistical software	3	Yes
10	Preparation of digital reports and presentations	3	Yes, if needed
11	Clinical information system workflow review	3	Yes
12	Review of data quality and completeness	5	Yes
13	Telehealth workflow or digital patient education session	2	Yes
14	Information security or data privacy incident reporting exercise	2	Yes

9.3 Procedures performed (P)

No.	Procedure	Min.	Sim
No.	**Procedure / Activity**	**Minimum**	**Sim.**
1	Basic computer operations and file management	5	Yes, if needed
2	Preparation of nursing reports using word processing software	5	Yes, if needed
3	Preparation of healthcare data spreadsheets	5	Yes
4	Preparation of tables, charts and graphs	5	Yes
5	Electronic nursing assessment documentation	10	Yes
6	Preparation of a nursing care plan using a simulated EHR	5	Yes
7	Retrieval of relevant patient information using an authorised or simulated system	5	Yes
8	Completion of an electronic nursing handover exercise	5	Yes
9	Healthcare data validation and error identification	5	Yes
10	Basic statistical analysis of a suitable dataset	3	Yes

No.	Procedure	Min.	Sim
11	Preparation of a healthcare data summary report	3	Yes
12	Literature search using an electronic academic database	5	Yes, if needed
13	Preparation of a digital health education presentation or leaflet	3	Yes
14	Demonstration of safe log-in, log-out and access control practices	5	Yes
15	Completion of a data privacy or cyber security case exercise	3	Yes
16	Preparation of an informatics-related audit checklist or report	2	Yes
17	Assessment of data completeness and documentation quality	3	Yes
18	Development of a small informatics-related quality improvement proposal	1	Yes
19	Presentation of a nursing informatics case study	2	Yes
20	Demonstration of a telehealth or digital patient education workflow	2	Yes

9.4 Logbook

- **Activity documentation:** Record the date, department, activity, participation level (O/A/P), clinical or simulation setting, competency achieved, reflection and preceptor's signature.
- **Guide verification:** The guide must verify competencies at the end of each posting. The Fellowship Coordinator should review the logbook at Weeks 8, 16 and 24.
- **Case studies:** Complete at least 10 case studies or case presentations covering EHR use, nursing documentation, clinical information systems, patient safety, data quality, information governance, telehealth and healthcare data analysis.
- **Digital assignments:** Complete at least three digital assignments, such as a healthcare data analysis report, an EHR documentation exercise and an informatics-related quality improvement proposal.
- **Audit activity:** Complete at least three informatics-related audits or structured reviews, such as documentation completeness, data accuracy, authorised access practices or system workflow.
- **Data analysis:** Complete at least one supervised healthcare data analysis report using approved, anonymised or simulated data.
- **Health education:** Prepare and document at least five digital health education activities or materials for patients, caregivers or healthcare professionals.
- **Competency assessment:** Demonstrate satisfactory skills in electronic documentation, information retrieval, data management, privacy, security and digital communication.
- **Submission:** Submit the completed logbook to the programme guide one week before the final assessment.

10. Scheme of Assessment

10.1 Final assessment and exit examination

The examination is conducted by the School of Nursing Science and Technology, Malla Reddy Vishwavidyapeeth. The final assessment by the assigned guides has three components.

Component	Details	Marks	Minimum (50%)
I. Multiple choice questions	Written paper; 1 mark per question; blueprint in 10.3	25	12.5

Component	Details	Marks	Minimum (50%)
II. Practical skills assessment	Three case scenarios with discussion; 20 marks each	60	30
III. Logbook maintenance	Completeness and regularity; accuracy of entries; guide verification	15	7.5
Total		**100**	**50**

10.2 Criteria to pass

- Minimum 50% in each of the three components and minimum 50% aggregate (50 of 100).
- In terms of the earlier wording: 50% in theory (MCQ) and 50% in practical separately, and 50% in internal assessment. The logbook, which records the continuous assessment by guides and preceptors, is the internal assessment component.
- Minimum 80% attendance in theory, simulation and clinical postings; missed postings must be completed before the final assessment.
- A fellow who fails a component repeats only that component, at the next scheduled assessment within 6 months, once.
- Any additional output or deliverable (for example a case study, audit or teaching session) is decided with the guide and needs prior written approval of the Fellowship Committee.

10.3 MCQ blueprint (25 marks)

Unit	Title	Theory hours	MCQs
I	Introduction to Computers and Nursing Informatics	10	2
II	Applications of Computers and Technology in Nursing Practice	10	3
III	Principles of Health Informatics	5	1
IV	Healthcare Information Systems	10	3
V	Shared Care and Electronic Health Records	10	3
VI	Patient Safety and Clinical Risk	5	1
VII	Clinical Knowledge and Decision-Making	10	2
VIII	eHealth: Patients and the Internet	10	2
IX	Using Information in Healthcare Management	10	2
X	Information Law and Governance in Clinical Practice	10	3
XI	Healthcare Quality and Evidence-Based Practice	10	3
Total		**100**	**25**

10.4 Practical skills assessment (60 marks)

Each fellow is assessed on three case scenarios in a simulated or clinical setting, with discussion. The cases are drawn so that the three together cover trauma or shock, a cardiac or respiratory emergency, and burns, obstetric or other emergencies. Each case carries 20 marks.

Criterion	Marks
Identification of the informatics problem and assessment of information needs	5
Selection of the appropriate information system or digital workflow	4
Technical skills, such as electronic documentation, data entry, retrieval, analysis or digital communication	6
Patient safety, privacy, confidentiality and professional communication	3
Discussion of rationale, limitations, risks and evidence-based practice	2

Criterion	Marks
Total per case	**20**
Total for three cases	**60**

10.5 Logbook assessment (15 marks)

Criterion	Marks
Completeness and regularity	5
Accuracy of entries	5
Guide verification	5
Total	**15**

10.6 Formative assessment

Unit-wise MCQ tests, case presentations and viva (the assessment methods listed under each unit), the log book assessment are used as formative assessment and feedback during the fellowship; they do not carry marks in the final result. The guide records progress at the end of each posting.

10.7 Award of the certificate

The Fellowship in Nursing Informatics and Technology certificate shall be awarded by Malla Reddy Vishwavidyapeeth (Deemed-to-be University) to fellows who fulfill the approved attendance, clinical/technical competency and assessment requirements, on the recommendation of the Fellowship Committee and under the signatures of the authorised university officials.

11. Infrastructure, Faculty and Quality Assurance

11.1 Clinical facilities

- Teaching hospital with a functional Hospital Information System (HIS), Clinical Information System (CIS) and, where available, a Nursing Information System (NIS).
- Electronic health record facilities or simulated EHR platforms for nursing assessment, care planning, documentation and retrieval of patient information.
- Hospital IT Department or Health Informatics Unit with appropriate technical personnel to demonstrate information system workflows and support.
- Clinical areas, including medical and surgical wards and intensive care units, where fellows can observe authorised digital documentation and patient monitoring workflows.
- Functional registration, laboratory, pharmacy and radiology information systems to demonstrate information exchange across departments.
- Computer laboratory with internet access and appropriate office, spreadsheet, presentation and data analysis software.
- Access to approved electronic literature databases, digital libraries and evidence-based practice resources.
- Facilities for telehealth, digital patient education and remote monitoring demonstrations, where available.
- Data security and information governance policies, including procedures for access control, confidentiality, incident reporting and secure record management.
- Arrangements with suitable healthcare institutions or IT organisations, where required, to provide exposure to health informatics and digital health technologies.

11.2 Simulation laboratory

- Teaching hospital with a functional Hospital Information System (HIS), Clinical Information System (CIS) and, where available, a Nursing Information System (NIS).
- Electronic health record facilities or simulated EHR platforms for nursing assessment, care planning, documentation and retrieval of patient information.
- Hospital IT Department or Health Informatics Unit with appropriate technical personnel to demonstrate information system workflows and support.
- Clinical areas, including medical and surgical wards and intensive care units, where fellows can observe authorised digital documentation and patient monitoring workflows.
- Functional registration, laboratory, pharmacy and radiology information systems to demonstrate information exchange across departments.
- Computer laboratory with internet access and appropriate office, spreadsheet, presentation and data analysis software.
- Access to approved electronic literature databases, digital libraries and evidence-based practice resources.
- Facilities for telehealth, digital patient education and remote monitoring demonstrations, where available.
- Data security and information governance policies, including procedures for access control, confidentiality, incident reporting and secure record management.
- Arrangements with suitable healthcare institutions or IT organizations, where required, to provide exposure to health informatics and digital health technologies.

11.3 Classroom and learning resources

- Smart classroom, library and digital resources, and online access to current resuscitation and trauma guidelines
- Learning management system for notes, videos and logbook forms

11.4 Quality assurance

- Fellow feedback on every unit and posting; guide feedback to the committee at mid-point and at the end
- Annual curriculum review by the Fellowship Committee, with updating to current guidelines
- Grievance redressal through the Fellowship Coordinator; escalation to the Dean
- Ethics: informed consent and confidentiality in all patient contact; supervised practice only within the scope of a registered nurse

12. Suggested References

- McGonigle, D., & Mastrian, K. G. Nursing Informatics and the Foundation of Knowledge.
- Nelson, R., & Staggers, N. Health Informatics: An Interprofessional Approach.
- World Health Organization (WHO). Global Strategy on Digital Health 2020–2025.
- Office of the National Coordinator for Health Information Technology (ONC). Resources on electronic health records and health information technology.
- Ministry of Health and Family Welfare, Government of India. Ayushman Bharat Digital Mission (ABDM): Policies and Guidelines.

- Government of India. Applicable laws and rules relating to digital personal data protection, information technology and electronic health records.
- International Organization for Standardization (ISO). Relevant health informatics and health information security standards.
- Current institutional policies on electronic health records, information governance, patient confidentiality and cyber security.

Editions are to be fixed by the Board of Studies.

Annexure A: Final Assessment Sheet – MRV Fellowship

A. Fellow details

Name of fellow	
Fellowship ID	
Institution / department	
Batch / year	

Component I: Multiple choice questions (25 marks)

Number of questions: _____ Marks obtained: _____ / 25 Result: ☐Pass ☐Fail (minimum 50% required)

Component II: Practical skills assessment (60 marks)

Case	Maximum marks	Marks obtained	Examiner signature
Case 1	20		
Case 2	20		
Case 3	20		
Total	**60**		

Result: ☐Pass ☐Fail (minimum 50% required)

Component III: Logbook maintenance (15 marks)

Criteria: completeness and regularity; accuracy of entries; guide verification. Marks obtained: _____ / 15 Result: ☐Pass ☐Fail (minimum 50% required)

Overall assessment summary

Component	Maximum marks	Marks obtained	Pass / fail
MCQs	25		
Practical skills	60		
Logbook	15		
Total	**100**		

Final result: ☐Pass ☐Fail (minimum 50% aggregate required)

Additional outputs (if approved by the Fellowship Committee):

_____

Certification

We certify that the above final assessment and exit examination have been conducted strictly in accordance with the approved MRV Fellowship guidelines.

Date: _____

1. Name of guide / examiner	
Signature	
2. Name of guide / examiner	
Signature	

Annexure B: Logbook Formats

B.1 Procedure log

Date	Patient ID	Procedure	Level (O/A/P)	Clinical / Sim	Outcome and reflection	Preceptor signature

B.2 Posting summary

Posting	Dates	Hours completed	Competencies signed off	Guide signature
Posting				
Hospital Information Management System (HIMS)				
Electronic Health Records and Clinical Documentation				
Nursing Information Systems and Clinical Decision Support				
Telehealth and Digital Health Applications				
Nursing Data Management and Quality Improvement				

B.3 Case study / presentation log

No.	Date	Diagnosis / condition	Area	Guide remarks and signature

Annexure C: Certificate of Completion (format)

MALLA REDDY VISHWAVIDYAPEETH

(Deemed to be University)

This is to certify that

_____

Fellowship ID _____ has successfully completed the 26-week

FELLOWSHIP IN NURSING INFORMATICS AND TECHNOLOGY

At the School of Nursing Science and Technology, and has passed the final assessment and exit examination held in _____ with a total of _____ / 100 marks.

Date of issue: _____	Place: Hyderabad
Controller of Examinations	Dean, School of Nursing Science and Technology