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Universal Health Care (UHC) and Electronic Medical Records (EMR)

Dr. Mike Muin

mikemuin@medprojects.com



Welcome to this presentation on Universal Health Care and Electronic Medical Records. The UHC Law, Republic Act 11223, enacted in February 2019, establishes a framework to ensure that all Filipino citizens have equitable access to quality healthcare services. To support this ambitious goal, the UHC Law mandates the development of robust Health Information Systems, or HIS. The successful implementation of HIS is seen as the essential infrastructure of trust that allows UHC to function efficiently. Today, we will detail the specific requirements for Electronic Medical Records under UHC and discuss the real-world implications of their adoption or lack thereof.



The EMR Mandate and Core Components

- UHC Law explicitly **mandates Electronic Medical Records**
- Part of larger integrated system including:
 - Electronic Prescription Logs (EPLs)
 - Human Resource Information Systems (HRIS)
 - Enterprise Resource Planning (ERP) systems
- Primary functions:
 - Efficient management of patient records
 - Streamline healthcare service delivery
 - Facilitate evidence-based decision-making



The UHC Law explicitly mandates that Health Information Systems must include Electronic Medical Records, or EMRs. EMRs are defined as a digital version of a patient's chart. These EMRs are part of a larger integrated system that also requires Electronic Prescription Logs, Human Resource Information Systems, and Enterprise Resource Planning systems. The primary function of these integrated systems is to enable the efficient management of patient records, streamline healthcare service delivery, and facilitate evidence-based decision-making across the Philippine health sector.



The Critical Requirement: Interoperability

- UHC Law identifies **interoperability** as critical objective
- Must have **seamless data exchange** across different platforms
- Crucial for supporting **continuity of care**
- Goal: Move away from **fragmented data systems** that disrupt care



The UHC Law identifies interoperability as a critical objective. EMRs and associated HIS components are expected to be interoperable, enabling seamless data exchange across multiple platforms such as iClinicSys, iHOMIS, and PhilHealth's eClaims system. Interoperability is crucial for supporting the continuity of care and efficient resource management across healthcare facilities. The ultimate goal is to move away from fragmented data systems that disrupt the continuity of patient care and hinder effective health system management.



Foundational Standards for EMR Compliance

- **Mandatory Adoption and Use of National Health Data Standards**
 - (JAO 2021-0002)
- **Key foundational standards:**
 - Client Identifier: PhilHealth ID or PSA National ID
 - Messaging Standard: HL7 FHIR
 - Clinical Terminology: SNOMED-CT
- **Standards Conformance and Interoperability Validation (SCIV) required**
- **All systems must pass validation for compliance**



To ensure true interoperability, the Mandatory Adoption and Use of National Health Data Standards for Interoperability, outlined in JAO 2021-0002, is required. Key foundational registries and standards mandated for data exchange include the use of PhilHealth ID number or the PSA's National ID for unique patient identification. The messaging standard is Health Level Seven Fast Healthcare Interoperability Resources, or HL7 FHIR, which is an international standard for exchanging healthcare information electronically. For clinical terminology, SNOMED-CT, or Systematized Nomenclature of Medicine Clinical Terms, is required for standardized medical documentation. Compliance with these standards is monitored through the Standards Conformance and Interoperability Validation framework.



EMRs and Financial Requirements

- PhilHealth directed to **incentivize** HIS incorporation and integration
- EMR systems must integrate with PhilHealth's eClaims submission
- **Quality metrics linked to EMR-based evidence:**
 - Compliance with national practice guidelines
 - Chronic disease management
 - Patient outcomes
- Aligns financing with clinical compliance and improved health outcomes



PhilHealth is directed to incentivize the incorporation and integration of health information systems. EMR systems must integrate with PhilHealth's eClaims submission system to streamline financial processes. It is recommended that PhilHealth link quality metrics, such as compliance with national practice guidelines and chronic disease management, to EMR-based evidence. This approach aligns financing with both clinical compliance and improved health outcomes, supporting a value-based care model.



Data Submission and National Repository

- All health entities required to submit data to PhilHealth
- Includes administrative, public health, medical, pharmaceutical data
- **National Health Data Repository (NHDR) established**
- NHDR serves as **single point of submission**
- NHDR is authoritative repository of country's health data
- Data submission required for licensing and contracting arrangements



All public and private, national and local health-related entities are required to submit health and health-related data to PhilHealth. This includes administrative, public health, medical, pharmaceutical, and health financing data. The National Health Data Repository, or NHDR, has been established as the single point of submission and authoritative repository of the country's health and health-related data. Submission of data to the NHDR is a requirement in the licensing and contracting arrangements for health-related entities, making compliance essential for continued operations.



EMR Requirements in Health Systems

- **Stage 1: Foundational Readiness**
 - Baseline assessment, gaps analysis, and identification of investment needs
- **Stage 2: System Development and Capacity Building**
 - Functional EMR systems in P/CWHS facilities
 - Must be capable of submitting reports to DOH/PhilHealth
- **Stage 3: Service Operationalization and Sustained Integration**
 - Validated EMR systems required
 - Must link Primary Care Provider Networks to secondary and tertiary care
- **Patient records must be accessible throughout health system**



The realization of integrated local health systems mandates specific EMR functionality across networks. In Stage 2, called System Development and Capacity Building, functional EMR systems must be implemented among health facilities within the Province-wide or City-wide Health System, or P/CWHS, and must be capable of submitting reports to DOH and PhilHealth. In Stage 3, Service Operationalization and Sustained Integration, validated EMR systems must effectively link Primary Care Provider Networks to secondary and tertiary care providers within the P/CWHS. PCPNs, which form the foundation of Health Care Provider Networks, must ensure patient records are accessible throughout the health system.



Key EMR Features for UHC Success

- Seamless data exchange and interoperability
- Real-time information sharing capabilities
- Support for referral system management
- Core clinical modules:
 - Laboratory and diagnostics
 - Electronic prescription and dispensing
 - Telemedicine
 - Clinical decision support
 - PhilHealth electronic claims processing



Successful UHC implementation relies on EMRs transitioning from mere data storage tools to essential, interconnected operational platforms. The ability to exchange, interpret, and use data seamlessly is crucial for continuity of care, especially since the lack of interoperability often leads to fragmented data systems that disrupt patient care. EMRs must be capable of real-time information sharing and support patient navigation and coordination mechanisms to higher levels of care. A comprehensive HIS should encompass clinical modules such as laboratory and diagnostics, electronic prescription and dispensing, telemedicine, clinical decision support, and PhilHealth electronic claims processing.



Supporting Data-Driven Governance

- EMRs must generate timely, accurate, and actionable data
- Enables better decision-making and resource allocation
- Supports evidence-informed policy and planning
- **Minimizes data entry burden** for healthcare workers
- Upholds patient privacy and confidentiality
- Compliance with Data Privacy Act of 2012



EMRs must be capable of generating timely, accurate, and actionable data. A strong and sustainable HIS ensures that health data enables better decision-making, efficient resource allocation, and improved health outcomes. The data generated are intended to guide research and evidence-informed sectoral policy and planning for UHC. Effective EMR solutions for front-line workers should maximize care delivery effectiveness and minimize the data entry burden. The system must uphold and protect patient privacy and confidentiality in compliance with the Data Privacy Act of 2012, ensuring that patient trust is maintained.



What Doctors Should Know: New Care Delivery Model

- UHC emphasizes shift to **prioritize primary care**
- EMRs enable Primary Care Providers as **initial contact and navigator**
- EMRs should incorporate Clinical Practice Guidelines
- Standardizes clinical care and improves quality
- Reduces unexplained variation in practice
- Core purpose:
 - Systemic care quality and safety benefits



Doctors, physicians, nurses, and other healthcare workers are critical users in the adoption of EMRs. Their understanding and adherence to the system are essential for UHC success. UHC emphasizes shifting the system to prioritize primary care. EMRs are critical to this shift, enabling the Primary Care Provider to serve effectively as the initial contact and navigator who guides patients toward cost-efficient and appropriate levels of care. EMRs should incorporate Clinical Practice Guidelines, which are essential for standardizing clinical care and improving the quality of care, reducing unexplained variation in practice, and managing costs. The core purpose of health information sharing is to provide systemic care quality and safety benefits to individual Filipinos.



Financial Accountability and Reimbursement

- PhilHealth moving toward **performance-driven** payment mechanisms
- EMRs track utilization and performance
- **Provider quality metrics** linked to EMR-based evidence
- EMRs crucial for electronic claims processing
- Compliant EMR-generated submissions required for payment
- Submissions must be recorded at point of care



EMRs have a direct impact on financial accountability and reimbursement. PhilHealth is mandated to move towards performance-driven, prospective payment mechanisms like capitation and global budgets. EMRs are the platform used to track utilization and performance. PhilHealth aims to link provider quality metrics, such as adherence to guidelines and patient outcomes, to EMR-based evidence, supporting value-based care. EMRs are crucial for PhilHealth electronic claims processing and provider payment. Compliant, EMR-generated submissions recorded at the point of care are necessary to receive PhilHealth payments, making proper EMR use essential for financial sustainability.



Addressing the Data Burden

- Current EMR implementations create **significant data entry burden**
- Reduces healthcare workers' capacity for direct care delivery
- System should be built into end-user requirements
- Goal:
 - Maximize care delivery effectiveness
 - Minimize data entry time and effort
- Doctors' data inputs feed National Health Data Repository
- Critical role in providing timely, accurate information



Doctors must recognize that current EMR implementations often result in a significant data entry burden that reduces their capacity for direct care delivery. They should note that the system should eventually be built into the end-user requirements for health providers and clinicians, maximizing care delivery effectiveness while minimizing data entry. The National Health Data Repository serves as the single source of truth for all health data, making doctors' role critical in providing timely and accurate information for policy and planning. Addressing this data burden is essential to ensure that healthcare workers can focus on patient care while still contributing valuable data to the system.



Call to Action for Doctors (Part 1)

- **Champion digital adoption and transformation**
- Implement EMR systems that have passed validation
- Use EMR real-time during patient encounters
- No batch encoding after patient visits
- Ensure data integrity at point of care
- Use compliant, EMR-generated submissions exclusively
- Review data in EMRs to maintain accuracy



The call to action for doctors involves embracing digital transformation and ensuring rigorous data integrity. Doctors and clinicians should actively implement and utilize EMR systems that have passed validation and are SCIV compliant. They should ensure that the EMR is used real-time during patient encounters, not just for batch encoding later, which is currently a common practice hindering efficiency. Doctors must ensure data integrity by utilizing compliant, EMR-generated submissions recorded at the point of care, and require exclusive use of interoperable EMRs with no parallel non-interoperable systems. Clinicians and doctors should review the data in the EMRs to maintain accuracy and quality.



Call to Action for Doctors (Part 2)

- Drive system improvement by articulating functional specifications
- Advocate for systems with minimal data entry burden
- Support incorporation of Integrated Care Pathways
- Work with facility management to ensure EMR linkages
- Use EMR for patient navigation and two-way referrals
- Advocate for permanent positions for digital health teams



Doctors must drive system improvement by articulating the functional specifications required for simple census tools and EMR solutions that minimize data entry burden. They should advocate for systems that incorporate Integrated Care Pathways into the workflow. Doctors should work with facility management to ensure their EMR links their Primary Care Provider Network to secondary and tertiary care providers within the Health Care Provider Network. This involves using the EMR for patient navigation and two-way referrals. Finally, doctors should push for the creation of permanent plantilla positions for digital health teams in hospitals and Rural Health Units to oversee EMR implementation and provide daily support such as configuration, data stewardship, user help, and connectivity management.



Benefits of Successful EMR Adoption

- All stakeholders agree HIS is relevant to achieving UHC goals
- Data-driven governance with timely, accurate, actionable data
- Better policy decisions and resource allocation
- Improved health outcomes through data coordination
- Strong and interconnected referral systems
- Expedites financial claims and hospital reimbursements
- Financial efficiency across the healthcare system



The benefits of successful EMR adoption are substantial. Across all surveyed sites, stakeholders including owners, implementers, and health workers uniformly agreed that HIS is either very relevant or relevant in achieving UHC goals, with 100% agreement among these groups. Strong and sustainable HIS ensures health data are timely, accurate, and actionable, enabling better policy decisions and resource allocation. Integrated systems improve health outcomes by enabling better data coordination and resource allocation. A fully functional HIS helps ensure strong and interconnected referral systems and expedites financial claims and hospital reimbursements from PhilHealth, leading to financial efficiency across the healthcare system.



Reality: Challenges in Implementation

- Interoperability remains key challenge across integration sites
- Referrals and patient history still paper-based
- Proliferation of multiple systems:
 - iClinicSys
 - iHOMIS
 - Google Forms
 - Private EMRs
- Healthcare workers use multiple systems simultaneously
- Double or triple encoding of same information required



Despite the mandate, the reality of implementation faces significant challenges. Interoperability remains a key challenge across all selected integration sites. For instance, referrals and patient history are often still paper-based between health centers and hospitals. There is a proliferation of multiple systems such as iClinicSys, iHOMIS, Google Forms, and private EMRs implemented concurrently, which suggests the need for a standardized system. Healthcare workers routinely face the burden of using multiple systems, often requiring double or even triple encoding of the same information. This is due partly to the lack of interoperable systems and creates significant inefficiency in the healthcare delivery process.



Continued Reliance on Paper Systems

- Many facilities continue using paper-based systems
- Causes:
 - Financial constraints
 - Inadequate equipment
 - Poor internet connectivity
- Common workaround: “Back encoding”
- Data collected on paper first
- Transferred to digital systems later
- Undermines real-time data availability



Many facilities continue to use paper-based systems due to financial constraints leading to inadequate equipment and poor internet connectivity. A standard workaround observed is what’s called back encoding, where staff collect data on paper first, then transfer it later to digital systems. This practice undermines the availability of real-time data and defeats the purpose of having an electronic medical record system. It also creates additional work for healthcare staff who must essentially document patient encounters twice, once on paper and again in the digital system.



Workforce and Financial Hurdles

- **Lack of human resources for HIS** is pressing issue
- Most ICT personnel hired under contractual arrangements
- Results in high turnover and difficulty sustaining systems
- Staff perform high-level ICT tasks beyond their skills
- Financial constraints result in inadequate IT infrastructure
- PhilHealth incentives for HIS not received by stakeholders
- Some stakeholders unaware of incentivization



The lack of human resources for health, particularly in HIS, is a pressing issue across all sites. Most ICT personnel are hired under contractual or job order arrangements, resulting in high turnover and difficulty sustaining systems. Staff often have to perform high-level ICT tasks beyond their skills and pay grade. Financial constraints result in inadequate IT infrastructure. Although PhilHealth is mandated to incentivize HIS, stakeholders reported they do not receive the said incentives, and some are even unaware that such incentivization exists. These workforce and financial hurdles create significant barriers to successful EMR implementation and sustainability.



Impact on Patients and Claims

- Lack of interoperability affects patient care
- Data duplication issues with PhilHealth ID numbers
- Inconsistent patient identification across systems
- Persistent problem of claim rejections
- Reimbursement concerns for patients and providers
- Delays in receiving healthcare funding
- Financial strain on healthcare organizations



The impact of these challenges extends directly to patients. The lack of interoperability and data duplication, such as inconsistent PhilHealth ID numbers, leads to a persistent problem of claim rejections and reimbursement concerns. This directly affects patients' ability to acquire healthcare funding and places financial strain on healthcare organizations. When claims are rejected or delayed, patients may face unexpected out-of-pocket expenses, and healthcare facilities may struggle with cash flow issues. These problems undermine the core UHC goal of ensuring equitable access to affordable, quality healthcare services for all Filipinos.



Consequences of Non-Standard Systems

- Current PhilHealth e-claims systems use APIs
- Not compliant with standardized FHIR messaging
- Risk: Proliferation of multiple non-standard API endpoints
- Each system integration requires custom development
- Significantly increases development costs and complexity
- Reduces system reliability and data consistency
- Makes maintenance and updates more difficult



Current PhilHealth e-claims systems often use Application Programming Interfaces or APIs but are not compliant with the standardized FHIR messaging standard. The failure to adopt FHIR standards risks creating a proliferation of multiple non-standard API endpoints, meaning that each system integration requires custom development work. This significantly increases development costs and complexity while reducing system reliability and data consistency. It also makes maintenance and updates more difficult and expensive. Without standardization, the healthcare IT ecosystem becomes fragmented, with each vendor creating proprietary interfaces that don't communicate well with other systems, perpetuating the very fragmentation that UHC aims to eliminate.



Cost of Non-Adoption: Systemic Impact

- **Fragmented data disrupts continuity of care**
- Non-networked facilities create health system blind spots
- Loss of quality and safety benefits
- Health information cannot be seamlessly exchanged
- Compromises systemic care quality and safety
- Impaired decision-making due to inaccessible data
- Poor quality and untimely data reporting



The costs of non-adoption extend beyond mere technological inconvenience and undermine the core objectives of UHC. Non-adoption or use of non-interoperable systems perpetuates fragmented data systems that disrupt the continuity of care. Non-networked facilities create blind spots that impede health system management. Lack of interoperability and mandatory data sharing means that health information cannot be seamlessly exchanged, which compromises systemic care quality and safety benefits for individual Filipinos. Valuable data is unavailable because it is buried in inaccessible silos. This results in poor quality and untimely generation and reporting of health and health-related data, which severely impairs data-driven management, policy decision-making, and research.



Cost of Non-Adoption: Operational Impact

- **Increased workload** and inefficiency for healthcare workers
- High data entry burden reduces capacity to deliver care
- Double or triple encoding wastes valuable time
- Resources diverted from direct patient care
- Staff burnout due to administrative burden
- Inability to track utilization of essential services
- Hinders monitoring and evaluation efforts



Healthcare workers routinely face the burden of using multiple systems, often requiring double or even triple encoding of the same information when interoperability is lacking. This high data entry burden reduces the capacity of health workers to deliver care. Staff burnout occurs due to the administrative burden of managing multiple non-integrated systems. Resources that should be focused on direct patient care are instead diverted to redundant data entry tasks. Non-adoption also limits the ability to track the utilization of essential primary care services, hindering monitoring and evaluation efforts essential for UHC success. The operational inefficiencies create a vicious cycle where healthcare workers become frustrated with technology that should be helping them but instead creates more work.



Cost of Non-Adoption: Regulatory and Financial

- **Licensing and contracting risk:**
 - Data submission via HIS required for DOH license
 - Required for PhilHealth accreditation
- **Loss of incentives and delayed payments**
- **PhilHealth links payment to compliant EMR submissions**
- **Non-compliance risks delays in claims processing**
- **Loss of performance-based incentives**
- **Financial sustainability of healthcare facilities at risk**



The submission of health data via HIS is explicitly a requirement in the licensing and contracting arrangements for health facilities. Non-compliance can risk both a provider's DOH license and PhilHealth accreditation, which could effectively shut down a healthcare facility's operations. PhilHealth intends to link provider payment speed or differentials and disincentives to the exclusive use of compliant, EMR-generated submissions recorded at the point of care. Non-compliance risks delays in PhilHealth claims or loss of performance-based incentives. This puts the financial sustainability of healthcare facilities at risk, particularly smaller rural health units and municipal hospitals that depend heavily on PhilHealth reimbursements to maintain operations.



Summary of Key Takeaways

- UHC Law requires **interoperable EMRs**
- Implementation challenged by:
 - Fragmented systems
 - Severe HR shortages
 - Insufficient funding and infrastructure
 - Reliance on paper and double-encoding
- Effective HIS essential for UHC goals
- Equitable, efficient, transparent health services depend on EMR success



Let me summarize the key takeaways from this presentation. The UHC Law fundamentally requires interoperable EMRs anchored in national standards like FHIR and SNOMED-CT. However, implementation remains challenged by fragmented systems, severe human resource shortages, and insufficient funding and infrastructure, forcing continued reliance on paper-based systems and double-encoding. Effective HIS implementation is essential for realizing UHC goals of equitable, efficient, and transparent health services. Without proper EMR adoption, the vision of universal health care for all Filipinos cannot be fully realized. The success of UHC is intrinsically linked to the success of EMR implementation across the healthcare system.



Priority Actions for Strengthening Implementation

- Require top leadership participation in steering committees
- Ensure policy continuity and enforcement
- Secure dedicated HIS budget lines within DOH and PhilHealth
- Link PhilHealth reimbursements to HIS adoption
- Incentivize standards-compliant EMR use
- Create permanent digital health positions in hospitals and RHUs
- Provide ongoing EMR support, configuration, and data stewardship



To strengthen EMR implementation and achieve UHC goals, several priority actions must be taken. First, require cabinet-level participation in inter-agency steering committees to ensure policy continuity and enforcement across government agencies. Second, secure dedicated HIS budget lines within DOH and PhilHealth appropriations to ensure sustainable funding. Third, link PhilHealth reimbursements to HIS adoption and standards-compliant EMR use to create strong financial incentives for compliance. Finally, create permanent digital health positions, or plantilla items, in hospitals and Rural Health Units to oversee EMR implementation and provide ongoing support, configuration, data stewardship, user help, and connectivity management. These actions will help transform EMR implementation from a struggling mandate to a functioning reality that supports universal health care for all Filipinos.



Thank You

Dr. Mike Muin

mikemuin@medprojects.com



Thank you for your attention. The path to universal health care in the Philippines depends critically on successful EMR implementation. While challenges remain significant, with proper leadership, funding, workforce development, and standards compliance, we can build the essential infrastructure of trust that will make UHC a reality for all Filipinos. I now welcome your questions and look forward to our discussion.