



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Digital Transformation in the Health and Care Professions (BMHP6026)

Component 1: Written Report

Student name: Charles Frimpong

Student number: 2227297

Lecturer's name: Laila Surani

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Introduction

Electronic Prescribing and Medicines Administration

This study examines the function of electronic prescribing and medication administration, looking at its main characteristics, advantages, and difficulties as well as the most recent developments influencing its future. It seeks to assess how EPMA helps deliver healthcare in a safer, more effective manner and to think about how it might lead to further advancements in medication management. (Clinical Pharmacy Association 2012)

Recent developments in EPMA are enhancing its influence even more. Medication safety and operational efficiency are being optimised by innovations like data analytics, automated dispensing integration, mobile and bedside technologies, barcode medication administration, and interoperability with electronic health records. Predictive analytics and AI-driven decision support are two recent innovations that present fresh chances to tailor care and lower the risks associated with prescription drugs.

In an integrated clinical setting, EPMA allows medical practitioners to electronically prescribe, review, dispense, and administer medications. EPMA improves accuracy and facilitates well-informed clinical decision-making by offering features like clinical decision support, allergy and interaction alerts, standardised prescribing templates, and real-time documentation. Additionally, electronic records facilitate audit, monitoring, and regulatory compliance, enhance communication within multidisciplinary teams, and guarantee improved traceability of medication administration.

The goal of Electronic Prescribing and Medicines Administration (EPMA), a game-changing digital solution, is to enhance the quality, safety, and efficiency of medication management in healthcare systems. Risks like unreadable handwriting, transcription errors, delayed communication, and restricted access to real-time patient information are frequently linked to traditional paper-based prescribing procedures. Medication errors, adverse drug events, and inefficiencies in clinical workflows can all be caused by these difficulties. As a result,

healthcare institutions all over the world are progressively implementing EPMA systems to support safer patient care and modernise medication management. (Internation journal of pharmacy practice 2014)

Impact on work force

Healthcare workers are significantly impacted by Electronic Prescribing and Medicines Administration (ePMA). The effects are mixed, resulting in new workload, training, and system challenges in addition to obvious safety and efficiency benefits.

Impact of ePMA on the Workforce

1) Increased Patient Safety (Good Effect on the Workforce)

- . Decreases transcription, prescription, and administration errors (reductions of 42–70% have been reported in some trusts).
- . Removes unreadable handwriting and offers:
- . Alerts for allergies
- . Warnings about drug interactions
- . Support for clinical decision-making
- . Employees say they feel less anxious and more confident about medication errors.

Effect of the workforce:

- . Less time spent on incident and correction management
- . Enhanced self-assurance and responsibility in the workplace (BMJ Journal 2026)

2) Time Efficiency and Workflow Changes

Saved time

- . No need to look for paper medication charts
- . Records are accessible to several employees at once.
- . It is possible to prescribe remotely.
- . According to some systems, nurses and chemists can save a lot of time.

However, workflow shifts

- . The length of the drug round may remain constant.

- . Time spent on documentation frequently rises (sometimes doubles).

Effect of the workforce:

- . Work becomes increasingly computer focused.
- . Transition to digital administration from physical tasks (BMC health services 2019)

Impact on service delivery

Daily Effects of ePMA on Service Provision

1) Prescribing (Physicians and Non-Medical Prescribers)

Modifications to everyday routine

- . Prescriptions are electronically entered rather than on paper drug charts.
- . Use of templates and order sets for common illnesses (e.g., insulin, antibiotics, VTE prophylaxis).
- . Alerts for allergies, interactions, and duplicate therapy in real time.
- . The capacity to write prescriptions at a distance (e.g., during ward rounds or from another location). (NHS London 2026)

Daily impacts

- . Less disruptions from nursing or pharmaceutical enquiries.
- . During ward rounds, more time is spent on computers.
- . Early adoption slows down initially, but with familiar

2) Medicines Administration (Nursing)

Modifications

- . Medication Administration Record (MAR) in electronic form.
- . Detailed instructions for administration, dosage, and timing.
- . Using reason codes to document omissions.
- . Barcode scanning for patient/drug verification (where available).

Daily impacts

Spend less time following charts or interpreting handwriting.
Identification of missed or past-due dosages is made easier.
more dependence on the availability of devices (tablets/workstations).
Initial rounds were a little longer.

3) Pharmacy Workflow

Modifications

Prescription verification and electronic clinical screening.

Paper charts are not transcribed.

remote evaluation in several wards.

Prioritisation is made simpler using task lists or dashboards.

Daily impacts

More time to optimise medications and conduct clinical interventions.

quicker turnaround for drugs used for discharge.

more participation in governance and system optimisation. (NHS 2024)

Impact on patients

Positive effects on patient perceptions and experience

1. A greater sense of security

Prescription errors (such as unreadable handwriting, incorrect dosages, drug interactions, and allergies) are decreased with ePMA.

Patients are reassured by decision-support signals (dosage limits, allergies, and interactions) that their therapy is being monitored electronically.

Patients frequently believe that care is more accurate, dependable, and current. (PLOS ONE 2023)

Patient experience impact:

Greater trust in the system and reduced anxiety about medication errors.

2. More reliable and timely medications

Prescriptions are quickly accessible throughout the system.

Fewer wait times for revised orders, pharmacy explanation, or charts.

Improved administration time tracking.

Patient experience impact:

More comfort and happiness due to less waiting for antibiotics, painkillers, or discharge medications.

3. Better coordination of care

Multidisciplinary teams (doctors, nurses, pharmacists) see the same real-time information.

Clear medication histories and changes.
Safer transitions (admission, transfer, discharge).

Impact on patient experience:
Care pathways are more seamless, and patients receive fewer contradictory signals.

4. A better experience with discharge

Prescriptions for electronic discharge are quicker and easier to understand.
Less mistakes or prescriptions not being taken.

Impact on patient experience:

Patients feel more equipped and self-assured when handling medications at home.

Potential negative effects on patient perceptions

1. Less in-person interaction

The amount of time clinicians spend staring at screens may increase.

Patients might experience:

Not as much heard

Reduced individual attention

Increased "computer-focused" care

Patient experience impact:

Perception of care as less personal or less compassionate. (PUB MED 2024)

2. System-related delays

Administration or prescription delays may be caused by sluggish logins, system outages, or an excessive number of alerts.

In order to administer medication, nurses might have to come back later.

Impact on the patient experience:

Anger, particularly when painkillers or urgent medications are delayed. (BMJ JOURNALS 2022)

Impact on community

Impact on Service Location (Hospital, Primary Care, Community Settings)

1 More effective provision of services

spends less time on paperwork.

Electronic transmission of prescriptions expedites the discharge process.

supports telehealth services and remote prescriptions.

Better synchronisation between places

Improved correspondence between:

Medical facilities

GP offices

Local pharmacies

Homes for the elderly

In underserved or rural areas, this is especially crucial.

Reduced medication waste

More accurate stock control and prescribing data improves resource management. (PubMed Central 2026)

2 Effect on Family Members and Carers

Less strain on carers

Confusion is decreased by clear drug directions.

Families will have fewer emergency scenarios to handle if there are fewer prescription errors.

Increased participation in care

When family members have access digital records, they can take part in conversations about medications.

Aids carers in overseeing intricate routines (e.g., elderly or chronically unwell patients).

Enhanced security for susceptible populations

especially helpful for individuals with various diseases, elderly people, and youngsters. (Healthcare news paper 2025)

3 Co-Production of Care

Co-production is when professionals and patients collaborate to plan and provide treatment.

Co-production is supported by ePMA by:

supplying clear medication records.

allowing for collaborative decision-making in consultations.

encouraging drug reviews in which patients can talk about their choices and negative experiences.

enabling digital platform-connected feedback systems.

Instead of being passive recipients, patients become active participants.

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5 Public Health Impact

Better data at the population level

makes it possible to track prescription trends.

reduces antibiotic resistance by promoting antimicrobial stewardship.

finds trends in the prescription of high-risk medications or opioids.

Equity in health

Standardised prescription procedures lessen variance in the calibre of care.

can use digital integration to enhance access in remote locations.

Decreased hospitalisations

Reduced prescription mistakes lead to fewer adverse drug events, which in turn reduce emergency room admissions.

Response to pandemics and crises

makes remote monitoring and prescription easier.

facilitates quick modifications to treatment plans.

Conclusion

ePMA improves safety and flow but increases dependency on technology and digital working by transforming medicine management from a reactive, paper-based procedure to a real-time, digitally coordinated workflow.

By increasing safety and efficiency, ePMA generally improves patient impressions; nonetheless, human factors—communication, eye contact, and decision-making involvement—are crucial. Patients evaluate their experience based on how physicians employ technology while providing person-centred care, not only on the technology itself.

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