
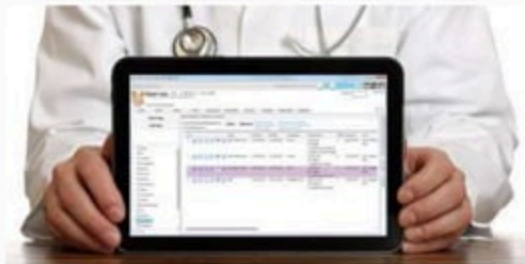


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- E-prescribing, or electronic prescribing is a technology framework that allows physicians and other medical practitioners to write and send prescriptions to a participating pharmacy electronically instead of using handwritten or faxed notes or calling in prescriptions.

ELECTRONIC PRESCRIBING(eRx)

- Definition
- Need of electronic prescribing
- Components
- Benefits of e Rx
- How to implement e Rx
- Disadvantages



Electronic prescribing

The transmission using electronic media ,of prescription or prescription related information between a prescriber,dispenser,pharmacy benefit manager either directly or through an intermediary including an eRx network.



- A qualified eRx system is one that is capable of all the following:

Generate a complete active medication list incorporating electronic data received from applicable pharmacies and pharmacy benefit managers.

Select medications, print prescriptions, electronically transmit prescriptions.

Provide information related to low cost, therapeutically appropriate alternatives(if any).





Need of Electronic prescribing

In developing countries, most of prescriptions are pen and paper based, which is an error prone process.

Errors-illegible handwriting, poor communication by phone or fax, duplication of data entry, wrong dosing, missed drug-allergy reactions-resulting in adverse events.

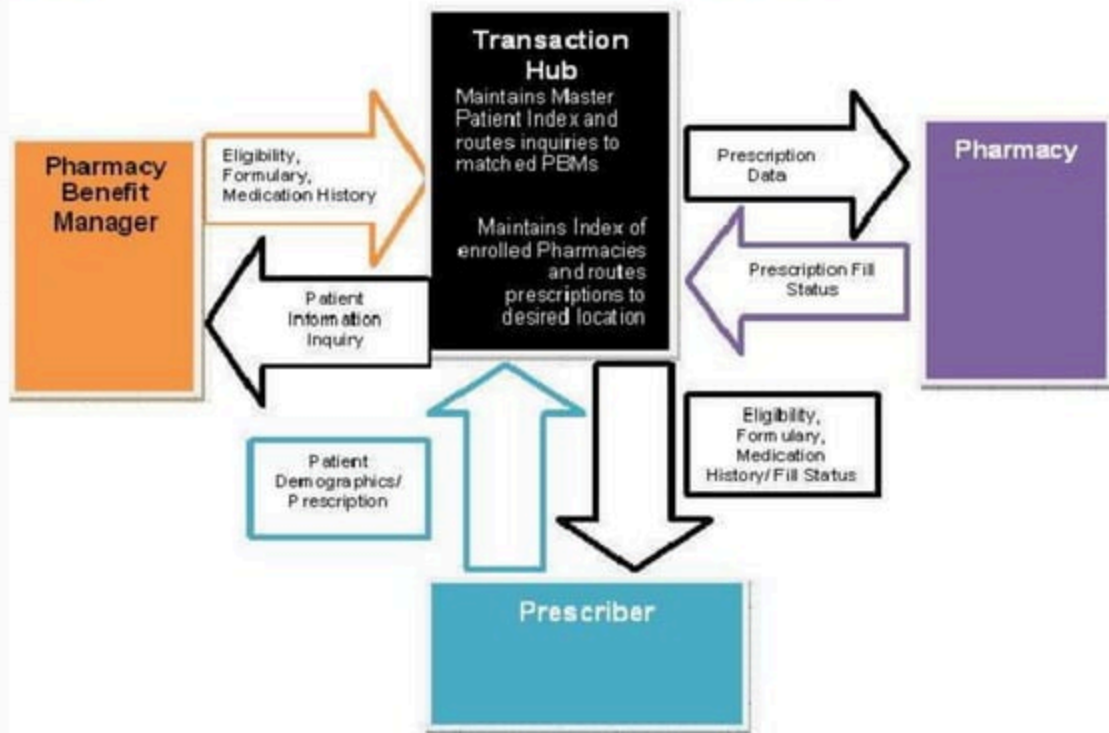
Elderly patients-see multiple physicians and deal with complex medication lists.

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- The writing of medication can be streamlined and efficient using e-prescribing system.
 - Electronic prescribing-decrease medication errors and improves efficiency.




The basic components of an electronic prescribing system are the:

- Prescriber - typically a physician
- Transaction hub
- Pharmacy with implemented electronic prescribing software
- Pharmacy Benefit Manager (PBM)



- The **prescriber**, generally a clinician or health care staff, are defined as the electronic prescribing system user and sign into the system through a verification process to authenticate their identity.
- Eprescribing system
 - allow the prescriber to review patients' current medication list and medication history information within the practice.
 - ❖ viewing details of a medication, remove a medication from the active medication list, change dose, etc.,
 - ❖ Prescribe or add new medication and select the pharmacy where the prescription will be filled.

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- The **transaction hub** provides the common link between all actors (prescriber, pharmacy benefit manager, and pharmacy). It stores and maintains a master patient index for quick access to their medical information as well as a list of pharmacies.

Transaction hub:

- The transaction hub send information ➡ PBM(pharmacy benefit manager), ➡ who will respond to the hub with information on patient eligibility, formulary, and medication history back to the transaction hub.
- The transaction hub then sends this information to the prescriber to improve patient management and care by completing and authorizing the prescription.

Pharmacy

- When the pharmacy receives the prescription information from the transaction hub, it will send a confirmation message.
- The pharmacy also has the ability to communicate to the prescriber that the prescription order has been filled through the system.

Choosing electronic prescribing system

There are two options for e-prescribing:

Stand alone systems or electronic health record(EHR) systems.

Stand alone systems


- ❖ It stores and manages patient data such as medication histories and medication allergies. To use it pharmacies can either download a software package onto their computers or contract with an e prescribing software application service provider and pay usage fees.

EHR software –costlier than standalone systems.

Benefits of eRx

Better way to treat patients

- ❖ Patient's prior and present information to treat them properly. medication history, eligibility determination, formulary coverage from the insurer and about drug interactions, drug allergies.
- ❖ Improving drug surveillance/recall ability
finding all patients with a particular prescription during a drug recall, or the frequency and types of medication provided by physicians.

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- ❖ It can check for appropriate dosages and duplicate forms of therapy.
 - ❖ Reduction in new prescription rates : reduction in accumulation of multiple medications.
 - ❖ Clinical pharmacology drug reference information ,including drug monographs,interaction reports .
 - ❖ Full mobility can be attained when using wireless network to write or authorise prescriptions from anytime to anywhere.
 - ❖ Patient information protected by strict privacy and security measures.



Benefits of Doctor:

Securely share patient data with other treating physicians and send/receive referrals.

Helps physicians to address duties in an efficient and timely manner.

Disadvantages of e-prescribing

- Software is necessary and comes at a cost; costs associated with use: start-up, maintenance, and transaction fees.
- Pharmacists must learn how to use the software.
- The computer may give a false sense of security; it is still possible to make errors.
- Electronic prescribing cannot be used during power outages and may be difficult in rural areas with poor internet connections.
- System failures and incompatibilities between technology designs may prove to be problematic :negatively affect patient care.
- Errors associated with e-prescriptions are not always detected by the pharmacist, which can result in decreased safety, as well as patient harm.

Table 1. Examples of problems involving electronically transmitted prescriptions

Type of problem	Reported example
Mismatch between drug dose type and dosage unit (e.g., solution ordered with quantity as tablets)	Prescriber selected amoxicillin suspension but selected quantity as 30 "tablets"
Wrong drug selected due to "stemming" (i.e., enters first few letters of drug name) at order entry	Prescriber entered "met" and then selected metoprolol tartrate instead of intended metoprolol succinate
Wrong drug (or other prescription data element) selected from drop-down menu	Prescriber selected procarbazine from drop-down menu instead of PROCARDIA (NIFEdipine)
Wrong drug selected because entire medication name not visible on screen	Prescriber chose "MetFORMIN 500-mg" tablets but intended "MetFORMIN 500-mg ER"
Instructions sent in the sig field contradicted what was sent in the notes field	"Take 1 tablet twice a day" in sig, but the notes field stated "Take 1 tablet in the morning and 2 tablets at bedtime"
Incorrect sig for medication	Drug: Z-Pak Sig: Take 1 Z-Pak daily with Z-Pak
Prescriber's agents used old chart entries for refill requests	Correct medication ordered, but dosage and directions were from previous year
Missing or mismatched quantities	Prescriber selected quantity of "1" for 10-mL insulin vial

