Hospitals and Health Systems: Negotiating the ROI for CPOE/e-Prescribing

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Margret\A Consulting, LLC
Strategies for the digital future of healthcare information

- ☐ **Information management and systems consultant, focusing on EHRs and their value proposition**

- ☐ **Adjunct faculty, College of St. Scholastica; former positions with CPRI, AHIMA, Univ. of Ill., IEEI**

- ☐ **Active participant in standards development; contractor to NCVHS on EHR and e-prescribing standards**

- ☐ **Speaker and author (Silver ASHPE Awards for "HIPAA on the Job" column in *Journal of AHIMA*)**

- ☐ Strategic IT planning
- ☐ Compliance assessments
- ☐ Work flow redesign
- ☐ Project management and oversight
- ☐ ROI/benefits realization
- ☐ Training and education
- ☐ Vendor selection
- ☐ Product/ market analysis

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Boundary Information Group

Strategies for workflow, productivity, quality and patient satisfaction improvement through health care information

- **Business process consultant focusing on electronic health records, and electronic transactions between organizations**

- **Former positions with MGMA, University of Denver, Dartmouth College; advisor to national associations**

- **Active leader in the Workgroup for Electronic Data Interchange (WEDI)**

- **Speaker and author (two books on HIPAA Security and one forthcoming on electronic health record)**

- Strategic IT business process planning
- ROI/benefits realization
- Project management and oversight
- Workflow redesign
- Education and training
- Vendor selection and enhanced use of vendor products
- Facilitate collaborations among organizations to share/exchange health care information

Agenda

- ☐ **How do hospitals and health systems apply ROI?**

- ☐ **What is CPOE and e-Prescribing?**

- ☐ **Negotiating the ROI for CPOE and e-Prescribing**

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Hospital and Health System ROI

Return on Investment (ROI)

- **Applies to capital projects**
  - **Construction/reconstruction**
  - **Medical equipment**
  - **Information technology**
- **Helps answer the questions:**
  - **Can we afford it?**
  - **What will it do for us?**
  - **What do we do first?**

Types of ROI Measures

- ☐ **Payback period**
  - ■ **Compares revenue stream and/or cost savings to cost of project**
  - ■ **Most commonly used measure**
  - ■ **Payback periods of 1-3 years desirable**
- ☐ **Internal rate of return**
  - ■ **Compares the value of the investment to others**
  - ■ **Often calculated by vendors**
  - ■ **IRRs of 15% or more desirable**
- ☐ **Net present value**
  - ■ **Uses present earnings percentage to determine time value of investment**
  - ■ **Not often used in health care**

Key Ingredients for ROI

- **Accurate cost data**
  - **Actual cash outlay**
  - **Associated costs**
  - **Unit costs**
- **Accurate revenue/savings data**
  - **Net reimbursement**
  - **Other revenue**
  - **Cost savings: staff reduction, expense elimination**
  - **Accurate metrics**

ROI for IT Projects

- ☐ **Much maligned**
  - ■ **Much needed**
- ☐ **What are the problems?**
  - ■ **Pricing is highly variable**
  - ■ **Law of supply & demand keeps price high**
  - ■ **Many associated and hidden costs**
  - ■ **Misplaced incentives:**
    - ☐ **Strong incentive to manage reimbursement**
    - ☐ **Weak incentive to improve performance**
  - ■ **Many confounding variables in measuring revenue/cost savings**

ROI for IT Projects

Cost/Benefit Analysis
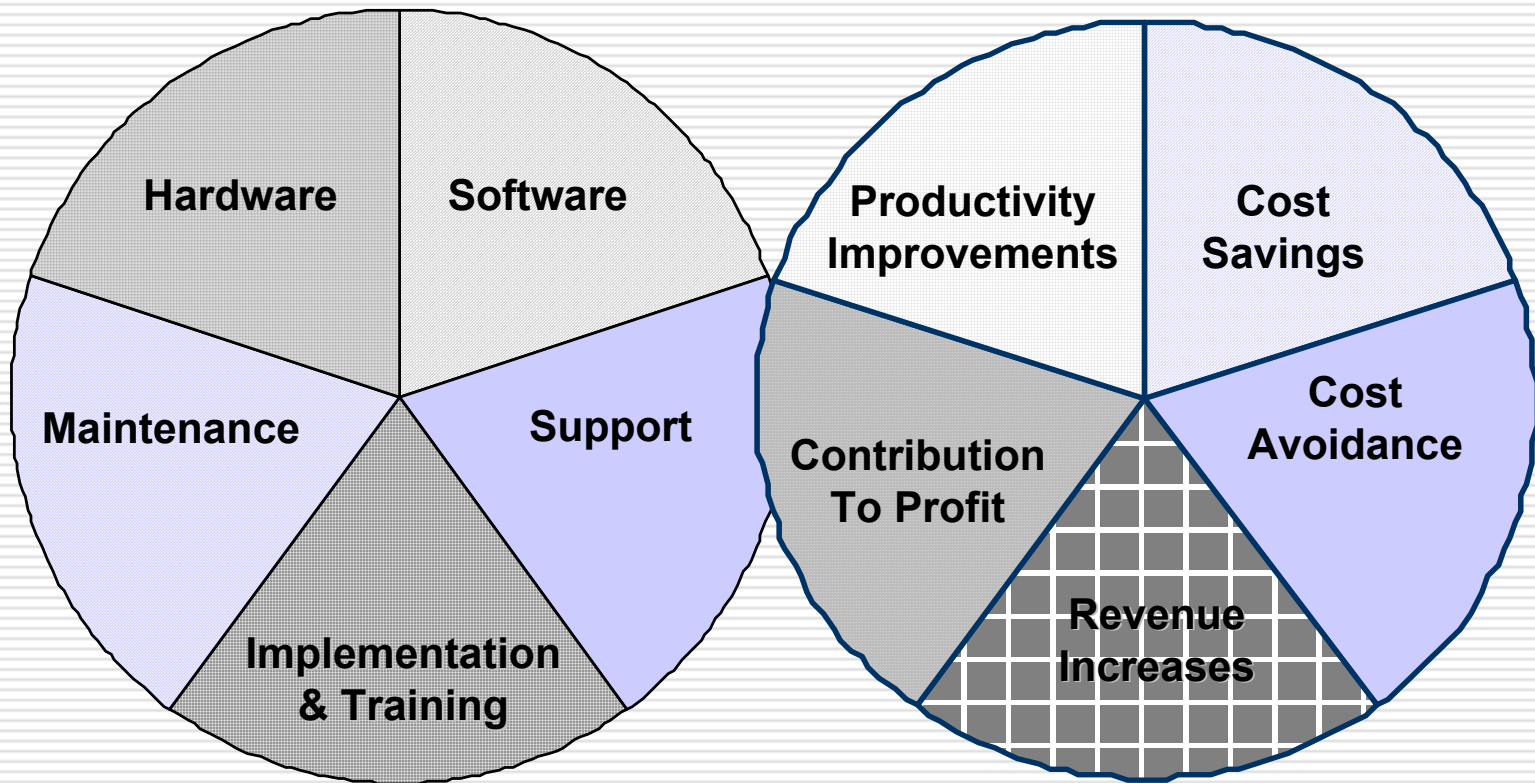
Benefits Portfolio

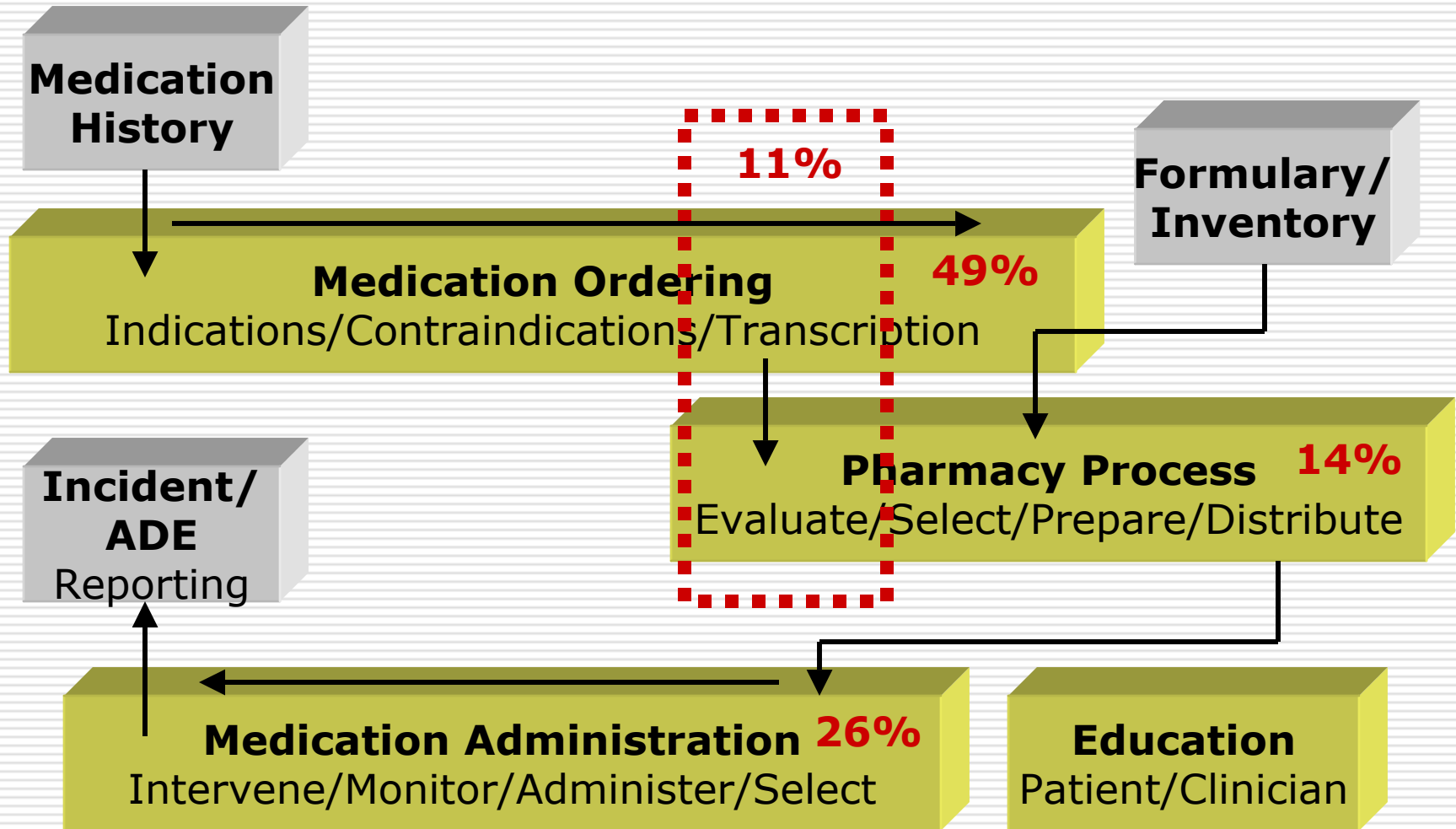- ☐ **Mix of financial *and* other benefits**
- ☐ **Other benefits are important and have down stream financial impact**
  - ■ **Quality of care**
  - ■ **Patient safety**
  - ■ **Productivity improvement**
  - ■ **Patient/provider satisfaction**
- ☐ **Value of benefits portfolio beginning to be recognized**
- ☐ **Many still do not believe any IT system pays for itself**

Hospitals and Health Systems: Negotiating the ROI for CPOE/ e-Prescribing

CPOE and e-Prescribing

Medication Mgt in Hospitals

Medication History

Medication Ordering 49%
Indications/Contraindications/Transcription

11%

Formulary/ Inventory

Pharmacy Process 14%
Evaluate/Select/Prepare/Distribute

Incident/ ADE Reporting

Medication Administration 26%
Intervene/Monitor/Administer/Select

Education Patient/Clinician

Source: FCG, CPOE: Costs, Benefits, and Challenges, January 2003

Computerized Provider Order Entry

- ☐ **Touted by many as way to improve patient safety, especially medication errors**
- ☐ **Idea is that providers entering their own orders would:**
  - ■ **Select right patient**
  - ■ **Make right decision**
  - ■ **Select right medication**
  - ■ **Enter right medication**
  - ■ **Transmit right medication**
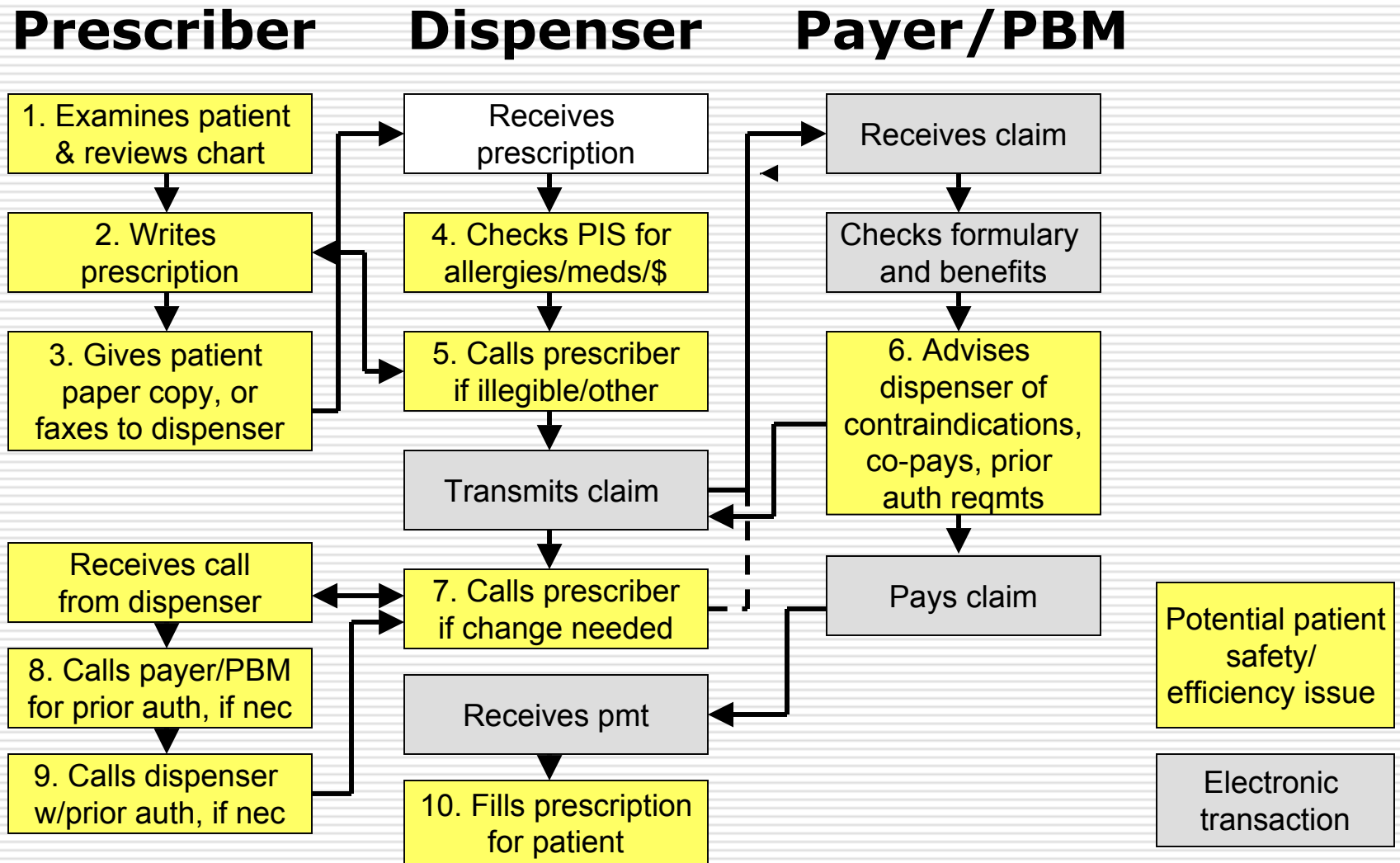
ADEs

Medication Errors
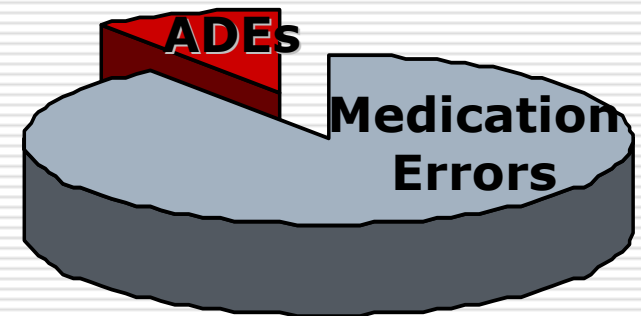
Challenges of CPOE

- **In many cases, providers**
  - **Become clerks**
  - **Find entry time-consuming**
  - **Find work flow disruptive**
- **In many cases, systems**
  - **Do not provide ubiquitous and quick data entry**
  - **Are not properly interfaced**
    - **Laboratory**
    - **Clinical documentation**
  - **Lack decision support**
  - **Lack integrated knowledge sources**

Today's Prescribing Environment

Prescriber   **Dispenser**   **Payer/PBM**

Prescriber	Dispenser	Payer/PBM
1. Examines patient & reviews chart	Receives prescription	Receives claim
2. Writes prescription	4. Checks PIS for allergies/meds/$	Checks formulary and benefits
3. Gives patient paper copy, or faxes to dispenser	5. Calls prescriber if illegible/other	6. Advises dispenser of contraindications, co-pays, prior auth reqmts
	Transmits claim	
Receives call from dispenser	7. Calls prescriber if change needed	Pays claim
8. Calls payer/PBM for prior auth, if nec	Receives pmt	
9. Calls dispenser w/prior auth, if nec	10. Fills prescription for patient	

Potential patient safety/ efficiency issue

Electronic transaction

Patient Safety/Efficiency Issues

1. **Medical and medication history is limited to what patient relates to prescriber, which may not include all medications or contraindications due to recall or restriction issues**

2. **Prescriber's handwritten prescription may be illegible, incomplete, for a contraindicated drug, or written without knowledge of lower cost or more efficacious alternative**

3. **Prescriber relies on patient to take the prescription to the dispenser**

4. **Dispenser's knowledge of patient's allergies, medication history, and indications for drug may be limited to that made available from patient and/or retained in the pharmacy information system (PIS)**

5. **Calling dispenser to clarify prescription intent or discuss a potential lower cost or more efficacious alternative is time consuming for dispenser, prescriber, and patient**
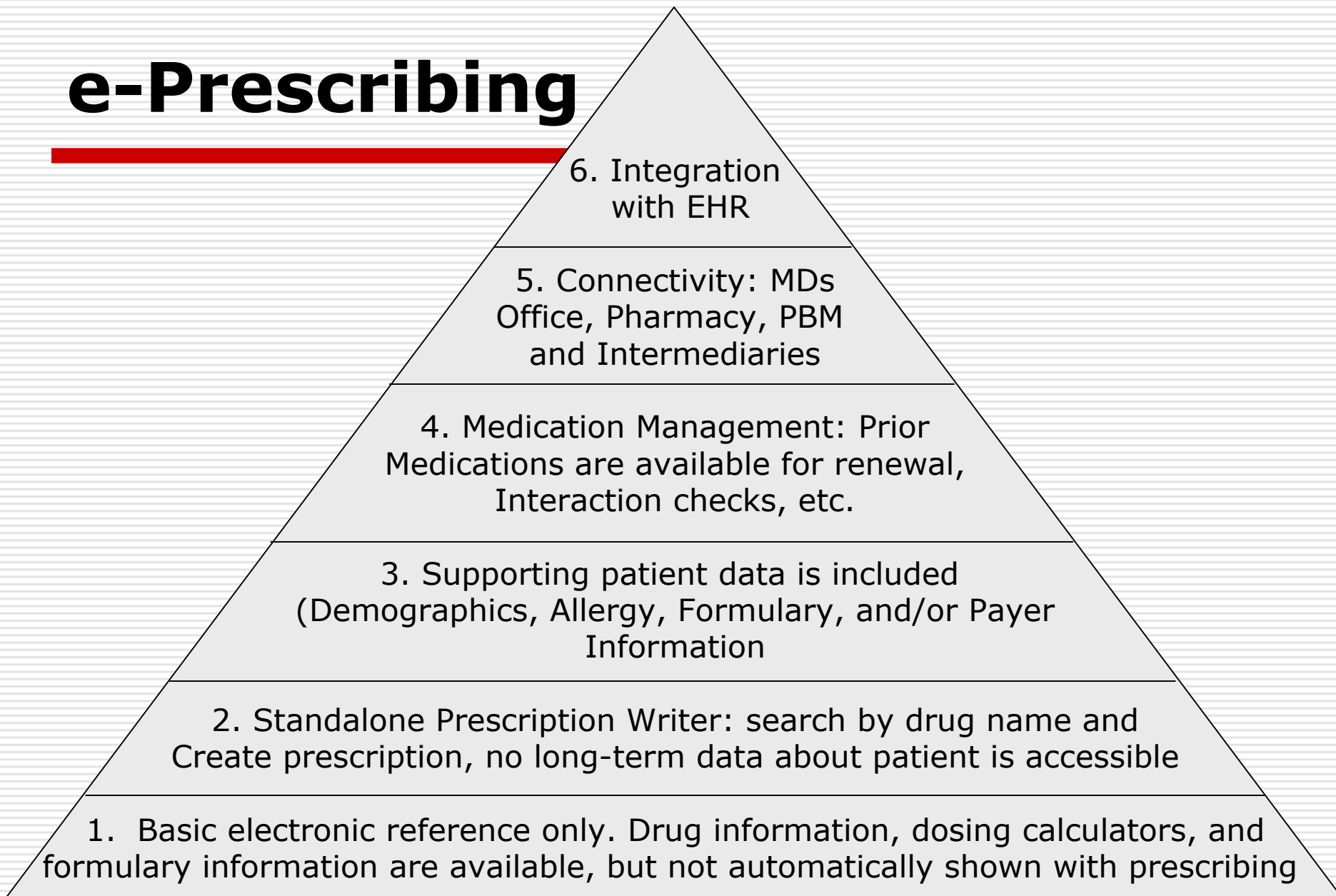
Patient Safety/Efficiency Issues

6. **Pharmacy may receive information from payer or PBM about contraindications to medications which patient appears to be taking due to claims history, or when there are issues associated with co-pays patient is unable to afford, or when a prior authorization is required**

7. **Calling dispenser to change prescription, or obtain prior authorization is time consuming for all**

8. **Prescriber calling payer/PBM for prior authorization is very time consuming, and has been known to result in a prescriber making a change to another potentially less efficacious drug to avoid delay or cost to patient**

9. **Prescriber calling dispenser with prior authorization is another time waster**

10. **There is no direct feedback mechanism for the prescriber to know when the prescription is ultimately filled, partially filled, or not filled**

e-Prescribing

6. Integration with EHR

5. Connectivity: MDs Office, Pharmacy, PBM and Intermediaries

4. Medication Management: Prior Medications are available for renewal, Interaction checks, etc.

3. Supporting patient data is included (Demographics, Allergy, Formulary, and/or Payer Information

2. Standalone Prescription Writer: search by drug name and Create prescription, no long-term data about patient is accessible

1. Basic electronic reference only. Drug information, dosing calculators, and formulary information are available, but not automatically shown with prescribing

Source: eHealth Initiative, Electronic Prescribing: Toward Maximum Value and Rapid Adoption, April 14, 2004
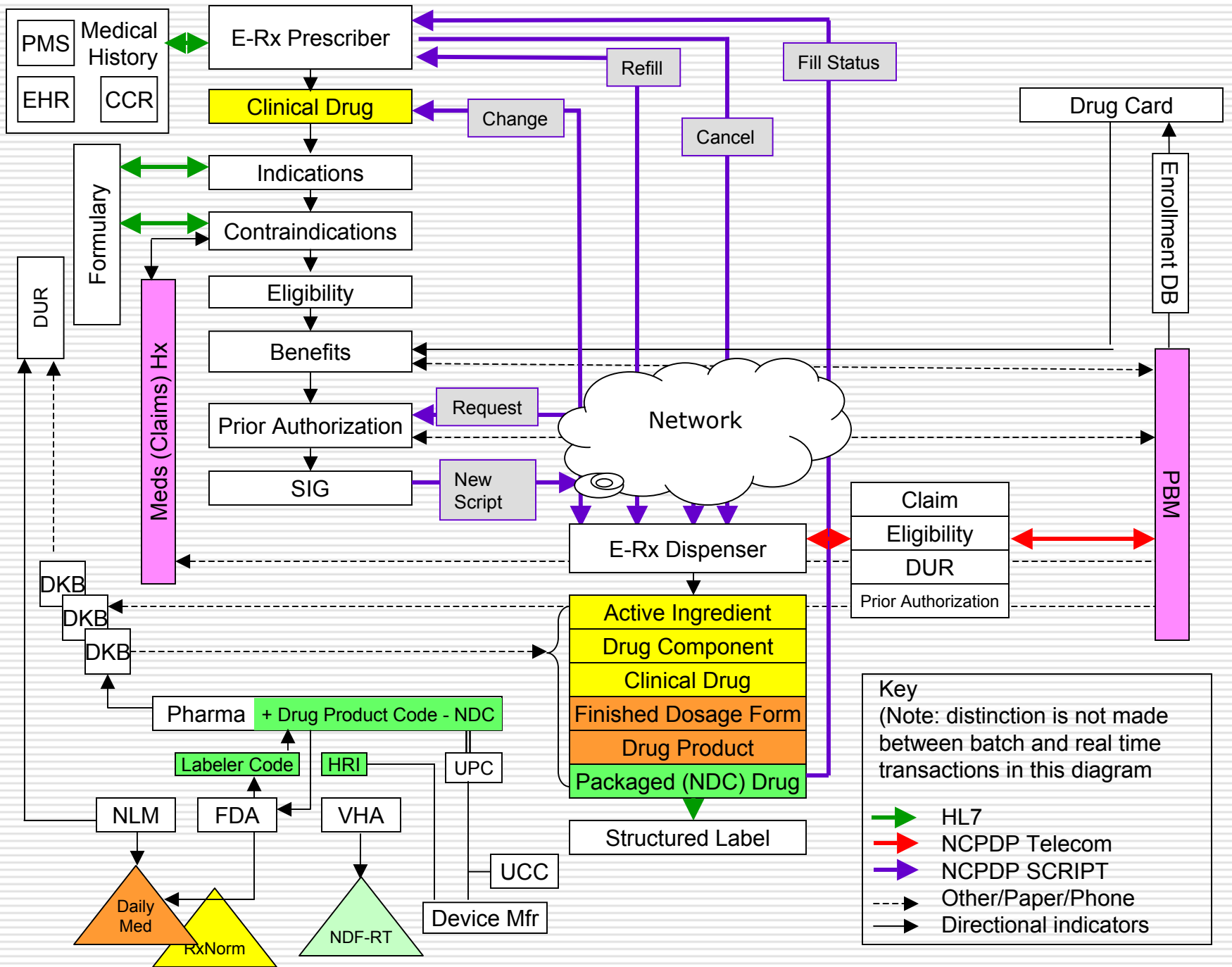
Challenges of e-Prescribing

- ☐ **Human-computer interface**
- ☐ **Work flow**
- ☐ **Customizable screens**
- ☐ **Ergonomics**
- ☐ **Value proposition**
  - ■ **Initial cost**
  - ■ **Subscription fees**
  - ■ **Transaction fees**
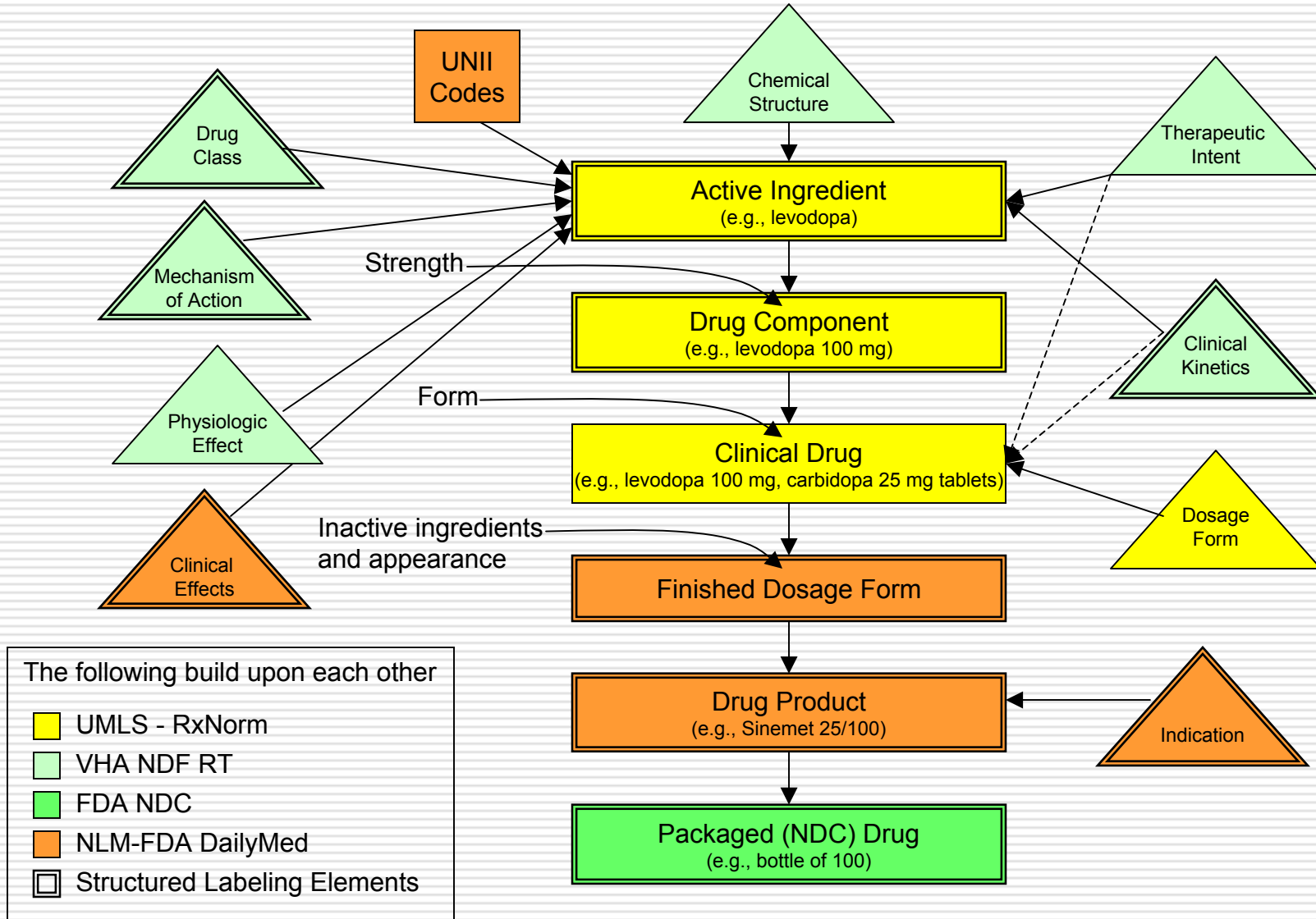 - ■ **Functionality**

Many Behind-the-Scenes Factors

- ☐ **Interoperability standards**
- ☐ **Vocabulary**
  - ■ **Mapping**
  - ■ **Comparability**
- ☐ **Trading partners**
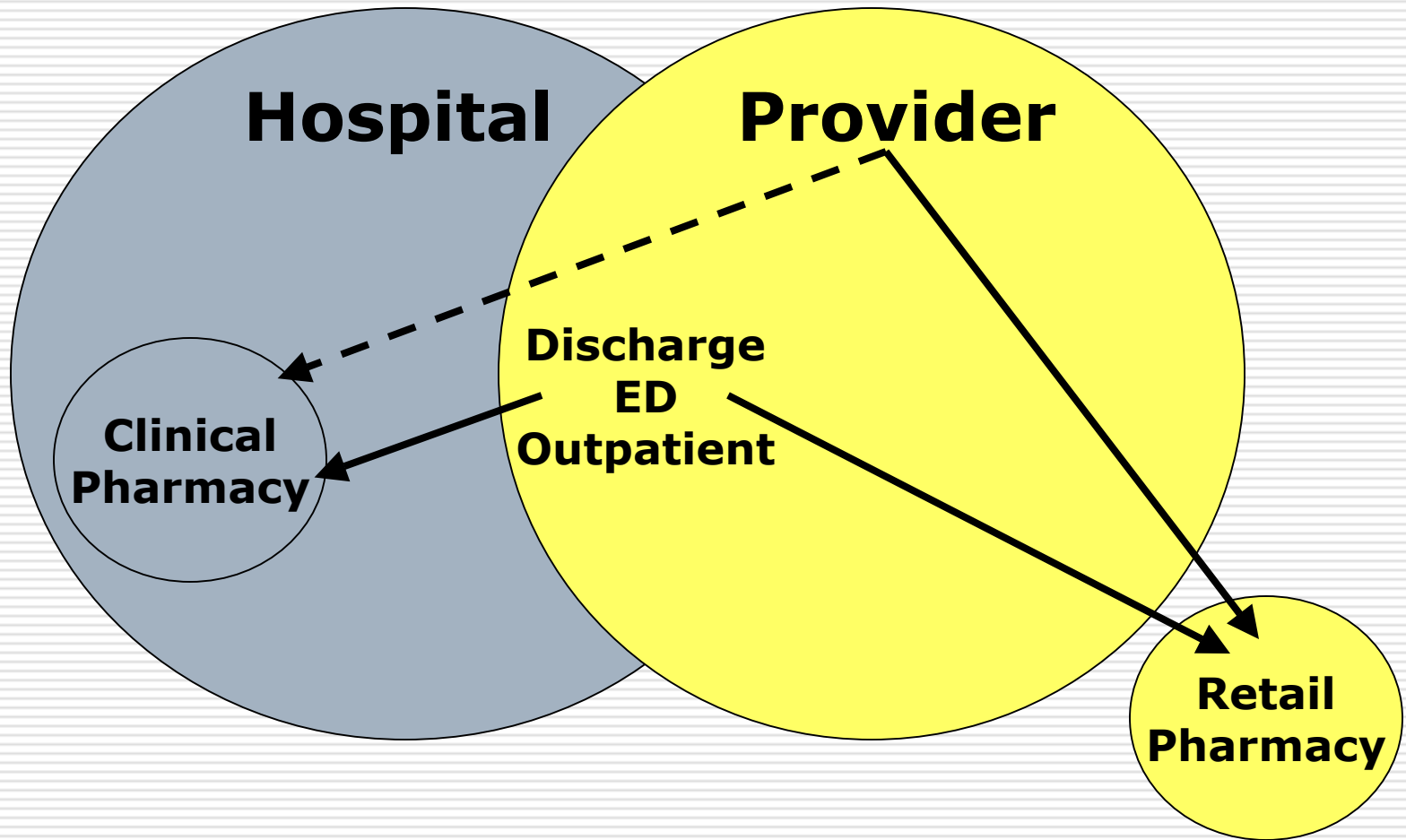 - ■ **Dependencies**
  - ■ **Transactions**

Drug Terminologies

Adapted from U.S. Government Drug Terminology, Randy Levin, MD, Director, Office of Information Management, Center for Drug Evaluation and Research, Food and Drug Administration

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CPOE vs. e-Rx

Hospitals and Health Systems: Negotiating the ROI for CPOE/ e-Prescribing

Where is the ROI in CPOE and e-Prescribing?

ROI: CPOE

➢ **Hospital**
  - ■ **Reduce ADEs leading to**
    - ☐ **Increased LOS**
    - ☐ **Increased services**
    - ☐ **Potential for lawsuit**
    - ☐ **Potential for bad press**
  - ■ **Reduce medication errors**
    - ☐ **Reduces potential for ADE**
    - ☐ **Improves clinician satisfaction**

➢ **Provider**
  - ■ **Increases time to order**
    - ☐ **More complete order**
    - ☐ **More knowledge, better outcomes**
  - ■ **Changes work flow**
    - ■ **Requires entry skills**
    - ■ **Different system at each site**
    - ☐ **Increases pharmacy and medical cooperation**
    - ☐ **Minimize rework and questions**

ROI: e-Prescribing

➢ **Provider**
- ■ **Cost**
- ■ **Work flow**
- ■ **PMS may not be HL7 compliant**
- ■ **May require EHR**
- ☐ **Reduce hassle factor**
- ☐ **Reduce errors, improving:**
  - ☐ **opportunity for incentives**
  - ☐ **reduced malpractice premiums**
  - ☐ **provider satisfaction**

➢ **Patient**
- ☐ **Reduce hassle factor**
- ☐ **Increase opportunity for recovery and wellness**
- ■ **Children may miss opportunity for parents to buy a toy**

Value of CPOE/e-Rx: Decision Support

- ☐ **Patient and order-specific data congruence**
  - ■ **Drug allergy, drug-drug, drug-lab, drug-food alters**
  - ■ **Calculators**
  - ■ **Knowledge sources**
- ☐ **Tailorable order sets**
- ☐ **Customizable rules**
- ☐ **Conditional guidelines and protocols**
- ■ **In easy to read and navigate screens**
- ■ **On portable, wireless devices**

Requirements

- ☐ **Adoption of standards for interoperability and data comparability**
  - ■ **MMA**
  - ■ **NCVHS**
- ☐ **Active engagement of all stakeholders in planning and managing change**
- ☐ **Investment in (the right) technology**
- ☐ **Willingness to work on process improvements**
- ☐ **Continual management of decision support rules**
- ☐ **Acceptance of no dual systems**

Contact Information

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