

THE PERFECT PRESCRIPTION: OBSTACLES AND OPPORTUNITIES ON THE PATH TO HIGHER QUALITY AND LOWER COSTS

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Foreword by Tom Skelton

FOREWARD

Electronic prescriptions have changed the way clinicians, pharmacists and patients communicate about drug therapies. We now have the opportunity to fully leverage this digital technology to improve the quality and reduce the cost of healthcare.

The perfect prescription is within our grasp, and should be a healthcare industry goal. Successfully delivering accurate patient and clinical information, in the form of perfect prescriptions, requires strong cross-market network alliances to unite disparate data from across healthcare—all backed by the highest levels of trust, reliability and governance.

In 2007, electronic prescriptions became legal in all 50 states. In the decade since, e-prescriptions have become standard industry practice. In 2016, 73 percent of all prescriptions in the U.S. healthcare system were delivered electronically. That's 1.6 billion e-prescriptions in one year or 3,000 every minute.ⁱ While this represents incredible progress,

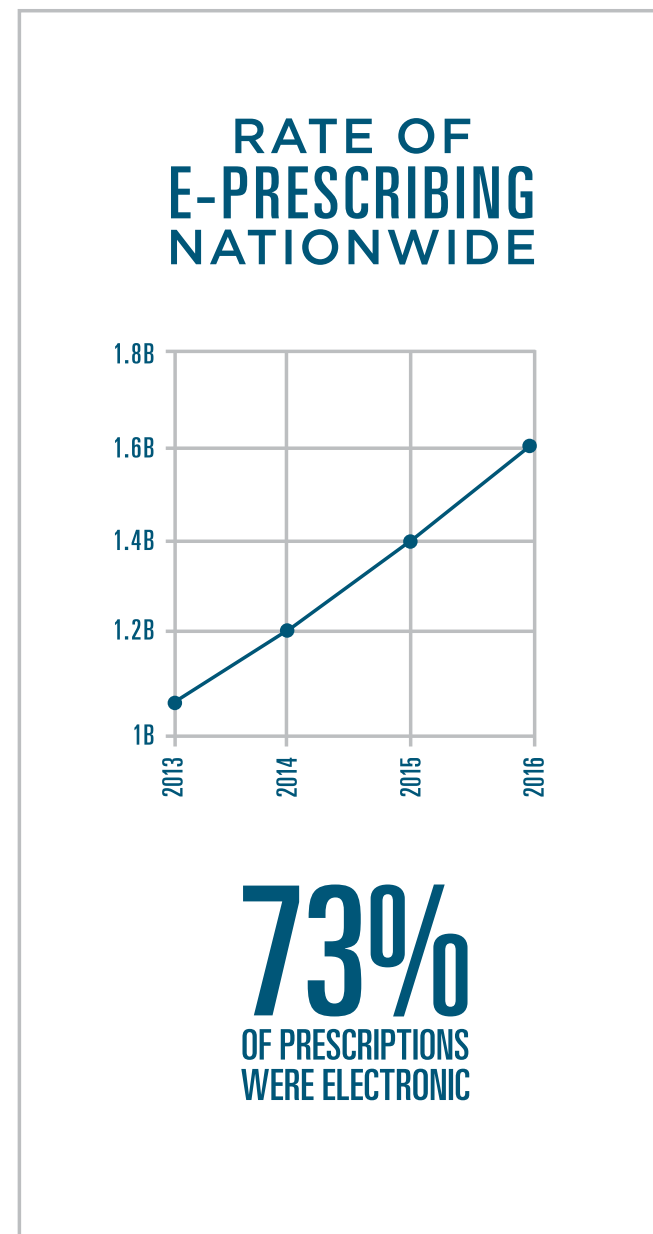
the adoption of e-prescribing has leveled off. This is primarily due to the low rate of adoption of e-prescribing of controlled substances. While the technology became legal for controlled substances in all 50 states and the District of Columbia in 2015, just 14 percent of controlled substances are e-prescribed today, compared with more than 90 percent of non-controlled substances.ⁱⁱ

Regulatory policy helped propel this rapid adoption while clinicians, pharmacists and patients embraced the convenience, speed and efficiency of e-prescribing. The impact has been substantial. While 28 percent of paper prescriptions never make it from the physician's office to the pharmacy, e-prescribing increases first-fill medication adherence by 10 percent.ⁱⁱⁱ The gains in administrative performance and clinical outcomes could generate between \$140 billion to \$240 billion in savings over ten years.^{iv}

As Dr. William Shrank, Chief Medical Officer of UPMC Health Plan and a former assistant professor of medicine at Harvard Medical School, observes, “This speaks to the potential of technology to improve the efficacy of drug therapy, which ideally should promote better health outcomes and reduce costs.”^v

When paper prescriptions were the norm, it was difficult to measure their accuracy and quality, though stories of bad handwriting abound. The emergence of e-prescriptions allows us to track transactions digitally and see gaps and human errors more clearly.

To date, the industry’s focus has been on moving prescriptions efficiently, safely and reliably. We now must turn our attention to the quality, accuracy and consumability of prescription data by ensuring electronic transactions are flawlessly executed. Poor quality can impede the processing and fulfillment of e-prescriptions. The resulting inefficiencies and errors cost hundreds of millions of dollars each year and can negatively impact patient safety, adherence and care. Within the next few years, almost every prescription in the U.S. will be transmitted electronically. Reducing the error rate and improving the efficiency of those e-prescriptions will significantly improve the operational performance of the healthcare system and the care that patients receive.



DEFINING THE PERFECT PRESCRIPTION

The financial industry shows us that it’s possible to execute complex digital transactions involving multiple stakeholders flawlessly, securely and conveniently.

When a shopper uses a credit card to make a purchase at their local grocery store, a three-way

transaction between the shopper, retailer and credit card company is initiated. The card’s magnetic strip or chip contains the shopper’s account information. The bar code of the item the shopper wants to purchase identifies the product and its price. All of this information is sent to the credit card company

for instant verification and approval. It is extremely rare for the process to require human intervention or to generate an error.

Electronic prescriptions are more complex transactions with great potential for ambiguity and misinterpretation, and they contain sensitive information that must be protected. To arrive at the perfect prescription, let’s define what one is.

A perfect prescription is a decision made by a physician, a pharmacist and a patient together. It is informed by robust and timely actionable intelligence that promotes the best possible health outcomes while maximizing the patient’s prescription benefits. A perfect prescription must be clearly and accurately conveyed to the pharmacist so that the prescriber’s intent is maintained without any need for interpretation or manual intervention. As a result, the patient receives the appropriate medication without delay or confusion.^{vi}

THIS LEVEL OF ACCURACY, EFFICIENCY AND QUALITY REQUIRES THREE COMPONENTS:

1) Accurate Patient and Clinical Information

The physician must have access to correct and appropriate information. This starts with the patient’s identity and benefit formulary and includes the patient’s medical history, current medications and past adherence behaviors as well as any potential contraindications, drug-to-drug interactions and drug allergies. The physician must also have ready access to information about the best course of treatment for the patient’s condition and circumstances, including the right medication and dosage.

2) Cost and Coverage Transparency

For a prescription to meet a patient’s needs, it must also be affordable. For most patients, that

means taking into account the parameters of their benefit plan. Other patients may not have insurance coverage for prescriptions. Regardless, when the patient knows how much a drug costs, especially the out-of-pocket costs, they can make a better decision with their physician. This transparency reduces any surprises or confusion at the pharmacy that might lead to prescription delays, substitutions or abandonment.

3) Efficient and Error-Free Transaction

Once the physician and patient have decided on a prescription, it’s critical for the prescriber’s intent to be accurately and clearly conveyed to the pharmacist without the need for subjective interpretation or manual intervention. This means that when the patient arrives at the pharmacy, they’ll receive their medication without delay, confusion or ambiguity.

Unfortunately, the perfect prescription is not yet an every day, every case reality. E-prescriptions can be written and interpreted in a variety of ways. Too often, the information available to the physician, the transmission of the prescription from physician to pharmacist and the exchange between pharmacist and patient is flawed, inaccurate or incomplete. The industry must work to ensure that physicians issue the right prescriptions and pharmacists correctly fill them every time.

“To meet the challenge of better, more affordable healthcare, we must streamline the nation’s medication delivery system from prescribing through dispensing to the patient. It should function predictably, dependably and effectively.”

AL KLEIN, SENIOR DIRECTOR OF TECHNICAL PRODUCT DEVELOPMENT AT NEXTGEN

FOUR STEPS CLOSER TO THE PERFECT PRESCRIPTION

1) Medication Selection

To write an e-prescription, a physician must find the drug in their system and then select or write instructions. The physician enters the information by keyboard and through various menu options. Common prescription products are an easy fit for electronic communication. Pull-down menus and discrete fields help accurately capture and communicate the physician's intent. In some cases, and for a number of reasons, the physician may mistakenly choose the wrong medication.

Meanwhile, the pharmacist often leverages electronic prescribing to automate medication selection using the drug identifiers, such as the National Drug Code (NDC). But the pharmacist might find that a prescription has conflicting information between the drug identifiers and the drug descriptions, or that the physician's instructions aren't clear.

Both prescriber and pharmacy e-prescribing systems rely on their drug compendium data to make sure every commercially available drug has a unique description and a numeric identifier code. However, coding formats may be inaccurate, incomplete, outdated or absent. End users may also lack the right training to work the system the right way in their workflow, or may be prone to erroneous ordering habits because their system interfaces may not be intuitive.

Complex, unusual or specialty prescriptions and compounds do not always fit within established fields, pull-down menus or other standard system functionalities. These outliers may cause the physician to manually enter more text or unstructured information in the notes field.

Further, a single drug description can have many text string variations for a single drug. This lack of standardization can make it difficult for pharmacists to interpret the description consistently and cause confusion about which drug to dispense.

All of these challenges can be overcome by matching the drug description to the compendia's e-prescribing preferred name (EPN). The use of consistent drug identifiers can also help avoid manual drug selection and ensure the prescriber's intent is clear.

Technology vendors can also help solve this problem by upgrading systems and making sure that all users adopt best practices. As an example, the Institute for Safe Medication Practices (ISMP) recently updated its list of drug names to include "tall man" lettering formats. This helps distinguish look-alike from sound-alike drugs.^{vii}

2) Dosage

Unclear dosage instructions often create errors. For example, the instruction to take one tablet by mouth daily seems straightforward. Yet, hundreds of versions of that simple phrase exist.

Similarly, the medication may be in liquid form but the prescribed dosage is for pills. Sometimes the quantity of the prescription and the number of doses do not correspond.

Unstructured fields often create such ambiguity. Surescripts estimates that two-thirds of data in an e-prescription is unstructured or free text. These text fields let physicians write specific notes, instructions or medication descriptions; however, they also create opportunity for conflicting information, ambiguity and confusion. For example, the structured field in an e-prescription could

indicate a dosage that is contradicted by the instructions in the free text field.

Every prescription should have patient directions (Sig) that detail the correct dosage and appropriate instructions. Increased use of structured and codified language is one way to reduce the existence of conflicting or confusing free-text information. Structured and codified text helps physicians and pharmacists ensure that patients take their medications correctly.

3) Reimbursement

When prescribing certain drugs, the physician may need to fill out a prior authorization form to ensure the medication is covered by the patient's benefit plan.

Physicians say manual authorizations get in the way of the perfect prescription. In fact, 91 percent describe the process as time consuming, expensive and frustrating,^{viii} and 40 percent of prescriptions that require a prior authorization are abandoned by the patient.^{ix} As Dr. Patrick McGill, Medical Director of Physician Informatics and family medicine practitioner at Community Health Network notes, "Prior authorizations are one of the biggest barriers and frustrations in the day-to-day delivery of care." McGill observes that they can take anywhere from 60 minutes to 72 hours to complete. In contrast, when e-prescribing is part of the provider's EHR workflow, authorization can be secured in seconds, with 60 percent of approvals returned within one minute.^x

Likewise, a patient might abandon a prescription if a prescribed drug is too expensive or not covered by the patient's plan. Costly or uncovered drugs may require the pharmacist to search for an affordable substitute and then confirm that change with the prescriber, causing disruptions and workflow inefficiencies.

When combined, electronic prescribing, prescription price transparency and electronic prior authorization can transform the prescription decision process and promote medication adherence. Prescribers and pharmacists benefit from a streamlined workflow and more time with patients, while patients benefit from lower costs and fewer surprises at the pharmacy.

4) Duplicate Prescriptions

Sometimes a physician may need to change a patient's medication regimen, even moments after a prescription has been requested. The cancellation of the first prescription may not be communicated clearly to the pharmacist, which creates confusion as to which prescription is the right one.

Prescribers need to be able to replace or modify prescriptions effectively and efficiently within their electronic workflow instead of contacting pharmacies by phone, fax or email. In turn, pharmacists need to be able to electronically request modifications to streamline communication with prescribers. Today, Surescripts processes more than 500,000 cancel requests from physicians to pharmacies each month.^{xi} Increasing the industry-wide adoption and implementation of the CancelRx transaction will lead to fewer errors, improved patient safety, greater efficiency and better use of resources.

Joel Jones, PharmD and Director of Population Health and Clinical Informatics at Epic, compares these electronic solutions to the simplicity of online retail. "I think about how easy it is for an Amazon consumer to go shopping and simply cancel their order. It's important to do that for medication as well. Without this capability, it's up to the provider to call the pharmacy. That's a barrier that increases the chances the patient ends up with two prescriptions."

STANDARDS AND REGULATIONS: NECESSARY BUT NOT SUFFICIENT

Hundreds of technology vendors work in the e-prescribing sector, offering EHR systems and IT tools and platforms. The effective delivery of a prescription requires consistency across systems, tools and platforms. Standards, which set the agreed-upon ways of formatting and communicating information, help vendors understand how to structure information and help users know how to input and access it.

Government agencies play a critical role in setting and enforcing levels of safety and transaction quality. They can and should also convene industry experts to decide and share best practices so that improvements can be brought to scale throughout the industry.

Technology undergoing massive commercial adoption will always run up against evolving needs. The industry must continue to raise the bar for e-prescription performance while also meeting the fundamentals of safety, security and quality.

THE COST OF IMPERFECTION

Pharmacists, who serve as the last set of eyes on a prescription, often spot and resolve any ambiguities or errors. The pharmacist may need to fax or call to clarify the prescriber's intent; however, every manual intervention comes with a cost.

Surescripts estimates that these requests for clarification amount to 141 million phone calls each year.^{xii} According to pharmacists surveyed by Surescripts, an estimated 10 percent of all e-prescriptions require some form of manual intervention such as retyping information in data fields. These interventions cost pharmacies between \$500 million to \$1 billion per year and increase the chances of additional error, miscommunication, misinterpretation, delay and abandonment.^{xiii} Reducing callbacks to prescribers by even one percent could save precious time and up to \$45 million in costs.^{xiv}

Just as important, when a pharmacist is forced to respond to a phone call from a prescriber, it takes their attention away from the patient. An automated e-prescription workflow lets the pharmacist give the patient the full benefit of their professional consultation and removes the worry over potential errors or cumbersome interpretations.

For the patient, prescription quality-related challenges can go beyond direct costs. Patients may forego medical care when prescriptions are delayed, not covered by a benefit plan or require higher than expected out-of-pocket costs. When patients don't adhere to their prescribed medication regimen, they can wind up ill, in the hospital, or far worse.

THE ROAD TO PERFECTION

In the transition from volume to value-based care, the healthcare system is working toward improved patient safety, outcomes and reduced costs. The nation's prescription system is fundamental to this effort.

The perfect prescription improves accuracy, interoperability, productivity and workflow efficiency for prescribers and pharmacists, allowing them to spend less time on manual processing or administrative tasks. The perfect prescription enhances both the economics and the experience of care for all involved, especially the patient who waits less for prescriptions, gets the pharmacist's full attention and maximizes their coverage benefits. Over time, insights drawn from e-prescribing trends and harnessed as actionable intelligence will drive

further improvements. Physicians will be able to optimize the quantity of medication prescribed, reduce waste, improve adherence and better manage costs by choosing appropriate generics and more affordable brands. Pharmacists will benefit, too. They'll be able to engage more productively with prescribers and spend more time delivering patient care.

Every stakeholder in the realm of medicine delivery can help make the perfect prescription an ordinary, everyday accomplishment.

As Dr. Peter Basch, Senior Director of IT Quality, Safety and Research at MedStar Health says, "E-prescribing makes it easier in this fast-paced world to do the right thing."

"Electronic prescribing helps deliver patient benefit information across care settings and helps prescribers make safer, more cost-effective care decisions."

DR. TROYEN BRENNAN,
CHIEF MEDICAL OFFICER AT CVS HEALTH

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REFERENCES

- i. Surescripts National Progress Report: Actionable Patient Intelligence is Taking Hold Across American Healthcare, 2016
- ii. Surescripts network transaction data 2016, and National Association of Chain Drug Stores, 2014
- iii. Surescripts, E-Prescribing Shown to Improve Outcomes and Save Healthcare System Billions of Dollars, February 1, 2012
- iv. Surescripts, E-Prescribing Shown to Improve Outcomes and Save Healthcare System Billions of Dollars, February 1, 2012
- v. Surescripts, E-Prescribing Shown to Improve Outcomes and Save Healthcare System Billions of Dollars, February 1, 2012
- vi. Dhavle AA, Rupp MT. Towards creating the perfect electronic prescription. J Am Med Inform Assoc. 2014; doi:10.1136/amiajnl-2014-002738
- vii. Special Edition: Tall Man Lettering, ISMP Updates Its List Of Drug Names with Tall Man Letters, Acute Care ISMP Medication Safety Alert, June 2016
- viii. Surescripts National Progress Report: Actionable Patient Intelligence is Taking Hold Across American Healthcare, 2016
- ix. Point of Care Partners, Electronic Prior Authorization: Helping Patients Get the Medications They Need Faster, 2015
- x. Surescripts National Progress Report: Actionable Patient Intelligence is Taking Hold Across American Healthcare, 2016
- xi. Surescripts network transaction data, 2017
- xii. Surescripts survey data
- xiii. Surescripts survey data
- xiv. Surescripts survey data