

REPORT 20 OF THE BOARD OF TRUSTEES (A-19)
Safe and Efficient e-Prescribing
(Reference Committee B)

EXECUTIVE SUMMARY

At the 2018 Annual Meeting Policy D-120.972, “Electronic Prescribing,” was amended by the House of Delegates (HOD) with additional directives from Resolution 237-A-18. The policy asks the American Medical Association (AMA) to study current electronic prescribing (e-prescribing) processes and make recommendations to improve these processes to make them as safe as possible for patients and as efficient as possible for prescribers. This report provides the requested study of current e-prescribing processes, including benefits and challenges, examples of interventional case studies, opportunities for improvement, and recommendations for multiple stakeholders.

The electronic exchange of prescription and medication history information between prescribers, pharmacies, and payers/pharmacy benefit managers, referred to as e-prescribing, has been shown to improve efficiency, patient safety, and cost savings. E-prescribing has also been shown to reduce medication errors and increase efficiencies in patient care. Despite the numerous advantages of e-prescribing over the former paper prescription systems, there are barriers to the safe and efficient use of e-prescribing systems, suggesting there are opportunities for improvement to maximize efficiency and safety.

REPORT OF THE BOARD OF TRUSTEES

B of T Report 20-A-19

Subject: Safe and Efficient e-Prescribing

Presented by: Jack Resneck, Jr., MD, Chair

Referred to: Reference Committee B
(Charles Rothberg, MD, Chair)

1 INTRODUCTION

2
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4 House of Delegates (HOD) with additional directives from Resolution 237-A-18. The policy asks
5 the American Medical Association (AMA) to study current electronic prescribing (e-prescribing)
6 processes and make recommendations to improve these processes to make them as safe as possible
7 for patients and as efficient as possible for prescribers.

8
9 This report provides the requested study of current e-prescribing processes, including benefits and
10 challenges, examples of interventional case studies, and opportunities for improvement.

11 BACKGROUND

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14 The electronic exchange of prescription and medication history information between prescribers,
15 pharmacies, and payers/pharmacy benefit managers, referred to as e-prescribing, has been shown to
16 improve efficiency, patient safety, and cost savings. E-prescribing has also been shown to reduce
17 medication errors and increase efficiencies in patient care.¹ In 2017 almost 70% of prescribers and
18 98% of pharmacies were utilizing e-prescribing.² Despite vast increases in adoption of e-
19 prescribing and the improvements realized thus far, there are still areas for improvement in e-
20 prescribing. For example, functions of the electronic systems, such as excessive or unnecessary
21 alerts,^{1,3} and the processes required for prescribing controlled substances, are perceived as
22 remaining barriers to the optimal use of e-prescribing.¹ The authors of Resolution 237-A-18
23 expressed concern that some steps required to order an e-prescription, such as selecting a pharmacy
24 to which the prescription should be filled, are error-prone and not efficient use of physician time.
25 The current two-factor authentication process required to electronically prescribe controlled
26 substances (EPCS) has also been noted as a cumbersome requirement lacking efficiency and
27 contributing to the slower adoption of EPCS compared to non-controlled substances. In 2017 21%
28 of controlled substances were prescribed electronically compared to 90% of non-controlled
29 substances.⁴ Despite the numerous advantages of e-prescribing over the former paper prescription
30 systems, the systems and processes still have opportunities for improvement to maximize
31 efficiency and safety.⁵

32 AMA POLICY

33
34
35 The AMA supports e-prescribing for both controlled and non-controlled substances and has
36 numerous policies expressing its commitment to advocating for better regulations and better
37 systems that enable more efficient, safe, and less burdensome use of e-prescribing. The AMA

1 supports programs that incentivize adoption of e-prescribing systems, but opposes a funding
2 structure that financially penalizes physicians that have not adopted such technology (Policy H-
3 478.991, “Federal EMR and Electronic Prescribing Incentive Program”). The AMA continues to
4 work with the Centers for Medicare and Medicaid Services (CMS) to ensure that the e-prescribing
5 policies and reporting procedures provide the greatest flexibility to physicians who participate in
6 the program (Policy D-120.957, “Electronic Prescribing Incentive Program”). The AMA
7 encourages states to implement modernized PDMPs that are seamlessly integrated into the
8 physician's normal workflow, and provide clinically relevant, reliable information at the point of
9 care (Policy H-95.939, “Development and Promotion of Single National Prescription Drug
10 Monitoring Program”).

11
12 Recognizing that EPCS continues to pose administrative burdens for physicians, in 2017 the AMA
13 modified existing policy to continue to advocate before federal and state agencies and legislative
14 bodies for elimination of cumbersome, confusing and burdensome requirements relating to
15 electronic transmission of physicians’ controlled substance prescriptions to pharmacies,” (Policy
16 D-120.956, “Electronic Prescribing and Conflicting Federal Guidelines”). The AMA also supports
17 action requiring that the U.S. Drug Enforcement Administration (DEA) establish reasonable
18 requirements enabling the use of e-prescribing for controlled substances (Policy H-120.941, “e-
19 Prescribing of Scheduled Medications”). In addition, the AMA is committed to reducing federal
20 roadblocks to e-prescribing and is working with the CMS and states to remove or reduce barriers to
21 electronic prescribing of both controlled substances and non-scheduled prescription drugs. Through
22 this work the AMA will reduce regulatory burdens to facilitate further adoption of e-prescribing,
23 including for controlled substances (Policy D-120.958, “Federal Roadblocks to E-Prescribing”).

24
25 The AMA advocates for changing the national standards for controlled substance prescriptions so
26 that prescriptions for controlled substances can be transmitted electronically directly to the
27 pharmacy in a secure manner and is committed to working with stakeholders to encourage the use
28 of standards that allow direct physician/pharmacist communication within existing electronic
29 health record (EHR) or e-prescribing systems (Policy D-120.944, “Improvement of Electronic
30 Prescription Software”). The AMA sought from CMS and the DEA a requirement that all
31 pharmacies and Pharmacy Benefits Managers (PBMs) acquire and implement the appropriate
32 electronic prescribing of controlled substances software to accept electronically transmitted
33 controlled substance prescriptions from prescriber systems that comply with CMS and DEA
34 certification requirements (Policy D-120.945, “Completing the Electronic Prescription Loop for
35 Controlled Substances”). The AMA also works with pharmacy benefit managers, payers and
36 pharmacists to make accurate, real-time formulary information available at the point of care. It is
37 AMA’s priority to promote procedural policies that ensure changes in formulary information are
38 communicated promptly to prescribers so alternative medication can be provided to patients in a
39 timely manner (Policy H-125.979, “Private Health Insurance Formulary Transparency”).

40
41 The AMA recognizes the importance of patient safety in the e-prescribing process, and is
42 committed to working with pharmaceutical, e-prescribing and point of care resource stakeholders
43 to increase physician awareness of risk evaluation and mitigation strategies to improve patient
44 safety in the e-prescription process (Policy D-100.971, “Physician Awareness and Education About
45 Pharmaceutical and Biological Risk Evaluation and Mitigation”). In addition, the AMA urges
46 Congress to unify state prescription standards to facilitate further adoption of e-prescribing, and
47 supports efforts to amend federal law to allow for the e-prescribing of a medication needed by a
48 patient with a mental health or behavioral health diagnosis when a valid patient-physician
49 relationship has been established through telemedicine (Policy D-120.972, “Electronic
50 Prescribing”). Last, in support of efforts to reduce medication errors by increasing efficiency and
51 safety in the process of cancelling electronic prescriptions, the AMA supports the creation,

standardization, and implementation of electronic prescription cancellation from all electronic medical records vendors and that these orders be accepted by pharmacies and pharmacy benefit managers (Policy H-478.983, “Electronic Prescription Cancellation”).

DISCUSSION

E-prescribing overview

E-prescribing is the computer-based electronic generation, transmission, and filling of a prescription, that replaces the need for paper and faxed prescriptions. CMS describes e-prescribing as “the ability for a prescriber to electronically send an accurate, error-free and understandable prescription directly to a pharmacy from the point-of-care.”⁶

E-prescribing eliminates the need for paper prescriptions, which can create hazards and increase risk of medical errors. E-prescribing systems can reduce medical errors, decrease pharmacy costs, improve both prescriber and pharmacy efficiency, eliminate handwriting interpretation errors, reduce phone calls between pharmacists and physicians, reduce data entry, and expedite prescription refill requests.⁷ In addition, e-prescribing can improve efficiencies by introducing an automatic process to reconcile drug-drug interactions and patient allergies at the point of prescribing. E-prescribing platforms also facilitate the ability to monitor prescribing patterns, which can help organizations ensure high-quality and cost-effective care.⁸

Although e-prescribing was not new and many practices had already transitioned from paper to electronic systems, in 2012 CMS implemented the Medicare eRx Incentive Program to encourage electronic prescribing by eligible professionals. The eRx program provided an incentive payment to eligible professionals who successfully e-prescribed for covered Medicare Part B services, and applied payment adjustments to those who did not. The eRx program ended in 2013 and was replaced with the Meaningful Use Incentive Program, which ended in 2017. E-prescribing measurement continues within the Merit Based Incentive Payment System track of the Medicare Quality Payment Program. In addition, CMS requires Medicare Part D sponsors, prescribers, and drug dispensers that transmit prescriptions and prescription-related information electronically to support and comply with the National Council for Prescription Drug Programs (NCPDP) SCRIPT standard when filing prescriptions electronically. CMS will adopt a revised SCRIPT standard on January 1, 2020.⁹ The new standard will include support for several functions that aim to improve efficiency, clinical decision-making and patient safety. New functionalities will include support for grouping of multiple prescriptions and the reporting of allergies and adverse events, enhancements to digital signatures, and the choice of whether or not to receive RxFill notifications.¹⁰

Improvements gained from e-prescribing

With the introduction of EHRs and industry movement to leverage more technology solutions in patient care, e-prescribing has become a key component of the daily clinical workflow. E-prescribing has been shown to provide many benefits in comparison to traditional paper prescribing

A principal benefit of e-prescribing is the improvement in quality of care and patient outcomes. Through e-prescribing, prescription accuracy, standardization and safety have improved.¹¹ Prescribing through specialized pharmacy software and/or an EHR provides clinical decision support (CDS) tools and screening capabilities that alert prescribers to potential adverse drug interactions or over-prescribing. These improvements have led to a reduction in medical errors, resulting in better patient outcomes and improved quality of care. One study found error rates decreased from 42.5 per 100 prescriptions to 6.6 per 200 prescriptions.¹¹ It is estimated that

1 medication errors have been reduced to as little as one-seventh of their previous level as a result of
2 e-prescribing.¹

3
4 The reduction in medical errors and improved quality outcomes have led to significant cost savings
5 to the overall healthcare system. It is estimated that improved patient outcomes and decreased
6 patient visits may result in between \$140 billion and \$240 billion in cost avoidance over 10 years
7 for practices that implement e-prescribing.¹ E-prescribing also assists with cost savings by reducing
8 fraud, abuse and drug diversion. Through e-prescribing, prescriptions and usage are more
9 effectively tracked, and the elimination of a paper script reduces the risk of fraud and illegal
10 prescription sales. The secure and safe transfer of data and prescriptions to a pharmacy also serves
11 as another protective safe guard in preventing drug diversion, as well as enhanced safety.

12
13 In addition, increased efficiency at the practice level has been reported. E-prescribing assists by
14 reducing challenges with legibility problems from handwritten prescriptions.¹² It also saves time
15 for the physician and team by reducing the number of calls received from the pharmacy to clarify
16 prescriptions.⁵ Although one study estimated it takes a prescriber 20 seconds longer per patient to
17 complete an e-prescription versus paper, the long-term benefits to the prescriber and patient are
18 overall time savings, costs savings and reduced prescription errors.^{11, 13, 14}

19
20 E-prescribing has also been shown to improve patient satisfaction. Many patients prefer the ease
21 and quick transmission of prescriptions to their pharmacy as well as the convenience of eliminating
22 paper prescriptions and reduced wait time at the pharmacy. Many platforms are also providing
23 more information on cost-effective medication options based on a patient's particular health plan,
24 leading to cost-savings for the patient and health system.¹⁵

25
26 Despite the potential additional time and steps required for e-prescribing, the impacts to workflow
27 should be minimal if systems are implemented effectively.¹ Most prescribers feel the benefits of e-
28 prescribing outweigh the burdens created by additional steps, and that the extra time spent in the e-
29 prescribing system is offset by the efficiencies gained in the overall process.^{1, 5}

30
31 The patient safety benefits and efficiencies of e-prescribing can be further enhanced through the
32 use of Structured and Codified Sig (short for Signatura). Structured and Codified Sig is designed to
33 communicate prescription dosing instructions in a codified way to the pharmacy that can then be
34 conveyed to the patient, thus reducing the opportunity for transcription errors and improving
35 efficiencies and work flows for prescribers and pharmacists. Unfortunately, despite its potential
36 benefits, Structured and Codified Sig has neither been widely utilized by prescribers nor supported
37 by EHRs that allow e-prescribing. NCPDP, which develops and maintains the SCRIPT standard,
38 convened a task group to review these utilization and support issues and developed a Structured
39 and Codified Sig Format Implementation Guide to support Structured and Codified Sig. Greater
40 utilization of Structured and Codified Sig will present prescribers, pharmacists, and patients with
41 an opportunity to improve safety and enhance workflow efficiency.

42 *Barriers to adoption and use*

43
44
45 Studies show unintended consequences of e-prescribing systems include changes in
46 communication patterns, generation of new kinds of errors, more and new work for clinicians,
47 unfavorable workflow issues, overdependence on technology, continuous demands for system
48 upgrades, persistence of paper, negative emotions toward the technology, and changes in power
49 structure and work roles.^{16, 17}

1 A principal barrier and challenge to e-prescription adoption is implementation. The cost of
2 implementing e-prescribing technology can be the primary limiting factor. According to the Health
3 Resources and Services Administration, the total cost of implementing an e-prescribing system was
4 found to be \$42,332, with annual costs after implementation of about \$14,725 per year for a
5 practice of 10 full-time equivalent psychiatrists.¹ A 2007 study by Scalise and colleagues revealed
6 that the cost to implement a basic e-prescribing program ranges from \$1,500 to \$4,000 per
7 physician and the price for an advanced system with alerts, reminders and system integration is
8 \$29,000 per physician in the first year and \$4,000 per physician every year thereafter.¹⁸ The DEA
9 in 2010 estimated the costs to implement the appropriate systems for EPCS, across pharmacies,
10 hospitals and practitioners, to be between \$43 million and \$1.54 billion, annualized over 15 years.¹⁹
11 In addition to the cost of implementing e-prescribing technology, the time investment and training
12 required can also present barriers to adoption.

13
14 Another challenge associated with e-prescribing is related to system errors and network challenges.
15 A key concern for system errors in e-prescribing is related to the impact on quality and the
16 potential to cause medical errors. Many systems have CDS tools, but there are considerable
17 variances of capabilities across platforms. Design issues with CDS tools can present serious risks,
18 for example in the programming of too few or too many alerts. A lack of alert specificity can result
19 in missing an adverse drug reaction, while an overload of alerts can produce the phenomenon
20 known as alert fatigue, which can result in providers overlooking and ignoring important alerts.²⁰ In
21 addition, many physicians report technical problems and poor network connectivity as a key barrier
22 in e-prescribing adoption. In some instances, pharmacies are not reliably receiving and processing
23 prescriptions sent electronically due to poor connectivity or network issues. This also has a
24 negative downstream effect on patients due to delays in filling medications.

25
26 Privacy and security issues also present concerns with e-prescribing processes. It is important for
27 prescribers to have appropriate security parameters in place to safeguard protected health
28 information (PHI). Protecting data securely is an ongoing and constant requirement and challenge
29 for providers, especially with many web-based tools and multiple opportunities for information to
30 be stolen or compromised. In addition, many information breaches often originate from internal
31 employee actions, which can be costly and require additional and ongoing training and security.²¹

32
33 Other barriers to efficient e-prescribing result from regulations of EPCS, enforced by the DEA. In
34 2010, the DEA legalized e-prescribing for Schedule II to Schedule V controlled substances. A
35 dozen states have passed laws mandating the use of e-prescribing for controlled substances, some
36 of which will be effective in 2020. The DEA ruling enforces strict standards for implementation
37 and utilization, including identity proofing, two-factor authentication, digital certificates, monthly
38 logs, third-party audits of software, and a requirement to keep two years of records.¹⁹ The
39 SUPPORT for Patients and Communities Act, enacted in 2018, further requires that all providers
40 use EPCS by January 1, 2021.²²

41
42 Two-factor authentication adds multiple additional steps to a prescriber's process.⁵ Board of
43 Trustees Report 6-I-17 described in detail the barriers associated with two-factor authentication:
44 While authentication through a combination of personal identification numbers (PINs), passwords,
45 and biometrics increases the security of EPCS, it also contributes to frequent workflow disruptions
46 and increases costs for many physicians. An AMA survey found that primary care physicians write
47 up to 100 prescriptions per day. Other specialists usually write an average of 10 to 25 prescriptions
48 per day. This volume of prescriptions makes compliance with two-factor authentication,
49 particularly as a distinct process from e-prescribing of non-controlled substances onerous and a
50 significant strain on practice workflows. Few health information technology (HIT) vendors
51 currently support EPCS, and those that do often require physicians to purchase add-on modules or

1 pay separate monthly service fees outside those of normal product maintenance. In speaking with
2 many DEA-registered physicians, the AMA has found that many methods and processes HIT
3 vendors utilize for EPCS are not well-aligned with normal e-prescribing workflows. In most
4 instances, physicians must initiate an entirely new set of computer programs and windows each
5 time they wish to use EPCS. The AMA shared with the DEA that cumbersome workflows and
6 applications that do not take physician needs into account are the primary impediment to physician
7 EPCS uptake and should be squarely addressed by system designers and product implementers.
8 The DEA requirement that biometric devices comply with Federal Information Processing
9 Standards (FIPS) compounds this problem by limiting many user-friendly consumer electronics
10 already found in physicians' offices from being utilized. The AMA asked that the DEA reexamine
11 the scope of technology that is compliant with EPCS requirements and allow for lower-cost, high-
12 performing biometric devices (e.g., fingerprint readers on laptop computers and mobile phones) to
13 be leveraged in two-factor authentication.²³ The SUPPORT for Patients and Communities Act
14 requires the DEA to update its regulations pertaining to how prescribers authenticate prescriptions
15 using biometric devices.²²

16
17 In addition to the requirements and time to e-prescribe controlled substances, providers also cite
18 general clinic operational inefficiencies. Commonly cited challenges are time pressure on busy
19 clinic days and frustration with time devoted to administrative portions of the e-prescription
20 process, such as pharmacy selection and populating e-prescribing systems with patients'
21 identifying information.¹⁵ Real-time benefit check applications integrated into the EHR can help
22 gain efficiencies, but are not yet a universally utilized tool. Cancelling an electronic prescription
23 often involves multiple steps and phone calls to the pharmacy, which can be burdensome and time-
24 consuming, and can add to the risk of medication errors. Integration of state prescription drug
25 monitoring program (PDMP) data into the e-prescribing software could also help reduce workflow
26 burdens. CMS in 2018 encouraged states to improve their PDMP systems to enable integration of
27 PDMP data with EHRs.²⁴

28
29 Another documented barrier is the excessive cost of complying with EPCS requirements. As
30 reported in BOT 6-I-17, many physicians—especially those in small and solo practices—face high
31 fees associated with the extensive technical, security, and other standard requirements (e.g., costs
32 for identity proofing, access control training and the setting of access controls, hardware, software
33 or application purchase and maintenance, reprogramming, and audit requirements), along with
34 workflow adjustments needed for EPCS. In addition to the costs of compliance with EPCS, there
35 are also monthly fees levied by HIT vendors. These fees and costs pose a significant barrier to
36 EPCS adoption. The DEA registration fee for EPCS is \$731 for three years and covers the costs of
37 its diversion control program.

38
39 Finally, some prescribers perceive the process of searching and selecting a pharmacy each time a
40 prescription is ordered electronically to be time-consuming and error-prone. Challenges can occur
41 when prescriptions need to be transferred from one pharmacy to another, sometimes a result of
42 patients relocating or changing health plans. Disruption in adherence can occur if pharmacies don't
43 stock particular medications and it becomes difficult for patients to fill their prescriptions. Health
44 plan changes also sometimes result in changes in pharmacy network status, which can lead to
45 unexpected coverage gaps. Additional costs to obtain a non-preferred pharmacy prescription may
46 only be realized when the patient picks up the prescription, resulting in phone calls from the patient
47 back to the prescriber for help. Most commercial e-prescription systems offer a function to select a
48 preferred pharmacy for patients. Other systems may also feature a "previously used pharmacy"
49 option, which keeps a list of pharmacies at which the patient has historically filled prescriptions.
50 Use of either of these functions, and regular verification of the indicated pharmacy, saves time and
51 reduces the risk of selecting an erroneous pharmacy.²⁵

Interventional case studies

Given the amount of time and resources dedicated to ensuring prescriptions are authorized, filled and renewed safely and efficiently, and in light of government focus on improving care quality, many practices have implemented changes to improve their e-prescribing processes and outcomes.

For example, researchers at Texas Children's Hospital implemented quality improvement interventions to improve e-prescribing.²⁶ Surveys and focus groups were conducted with patient families and pediatric residents to identify barriers and propose solutions to support efficient e-prescribing. These data were used to generate a series of interventions: (1) provider education; (2) changes in patient registration workflow; and (3) electronic health record changes to improve the frequency of e-prescribing on the pediatric hospital medicine (PHM) service.

One intervention was identified through the resident surveys which noted the absence of a preferred pharmacy in the patient's EHR as a barrier to e-prescribing. Following this observation, registration personnel were trained on entering preferred pharmacy information, and it was added to their EHR workflow. Because personnel already input patients' pediatrician information and other demographic data in the EHR, it was deemed an appropriate intervention to address this gap. Another intervention included an EHR build that required residents to assign an authorizing attending provider for discharge prescriptions, whether printed or e-prescribed. This enhancement ensured that attending information would be linked to all prescriptions for appropriate insurance processing and follow-up, whereas prior to that, residents were limited to manually writing in the attending name on printed prescriptions only, since the functionality was not allowed in the e-prescribing system. Texas Children's Hospital also designated e-prescribing as the default method of prescription for all providers system-wide, and forcing providers to actively opt out of e-prescribing. The build included an in-line validation to ensure that prescription orders were eligible for e-prescribing and that all necessary information was present.

This onsite research resulted in an increase in e-prescribing frequency on the PHM service from a median of 7.4% to 48.9%, which was sustained for an additional six months. The frequency of PHM prescription errors was unchanged.²⁶

Marceglia et al identified six main phases of the e-prescribing process and proposed an updated comprehensive model for the e-prescribing process able to represent, analyze, and compare current systems and to support the design of new, more general, systems. Researchers identified six key phases of the e-prescribing process: Assign, Transmit, Dispense, Administer, Monitor, and Analysis Decision. The evaluation of systems completed in developing this model identified efficiency benefits primarily in the drug management controls within the e-prescribing systems. This model-based implementation of each phase is shown to have an impact on the quality of care, access to care, and the effectiveness of care delivery.²⁷

A 2011 case study tested the effects on prescribing errors of transitioning from a local EHR with minimal CDS to a new EHR with robust CDS for e-prescribing. Overall prescribing error rates declined significantly one year after implementation, the main improvement being a reduction in inappropriate abbreviation errors. At 12 weeks post-implementation, however, rates of non-abbreviation errors peaked and there was no significant improvement after one year, suggesting that there are still safety risks in transitioning to an e-prescribing system that features more robust CDS.¹⁴ Prescribers in this intervention, who were experienced e-prescribers, were surveyed for a parallel qualitative study. The participants found the transition to be extremely difficult and the EHR was not perceived to improve safety.²⁸

Another case study identified an approach to simplifying the overall prescription renewal process. Synchronized, bundled prescription renewal, a systematic approach to prescription management, can decrease patient inconvenience, support medication adherence, and save one to two hours of physician and staff time each day.²⁹ In this system, the prescriber renews all chronic medications (except narcotics and benzodiazepines) at the annual comprehensive care visit, allowing for sufficient refills to last until the next annual visit. This eliminates the need for the physician and staff members to repeat the work of renewing each medication at interval visits. The AMA offers a STEPS Forward module on synchronized prescription renewal that is available with CME through the AMA Education Center.³⁰

AMA efforts

In addition to comprehensive policy on e-prescribing and educational content on synchronized prescription renewal, ongoing AMA advocacy has succeeded in addressing a number of concerns about e-prescribing practices and regulations. The AMA continues concerted engagement to address specific barriers to e-prescribing of controlled substances due to overly burdensome DEA regulations. In the past, the AMA provided comments as part of the DEA's rulemaking process, raising concerns with a number of regulations and requirements. More recently, the AMA again met with the DEA and reinforced and expanded on those recommendations that would enhance security (and decrease diversion) while streamlining the administrative burden. The AMA noted that many physicians have reported that a well-designed electronic prescription system adds value to their practice of medicine and supports better patient care.²³

Recommendations for improvements to e-prescribing practices

Surescripts published "E-Prescribing Quality Guidelines" which offers e-prescribing clinicians and EHR vendors comprehensive guidance on key principles and best practices to consider when initiating and transmitting electronic prescription orders.² Based on these best practices, and the literature and case studies reviewed, several recommendations for improving e-prescribing processes can be offered.

Some improvement efforts are already part of AMA's ongoing commitment to optimizing the use of e-prescribing in medical practice, as outlined in the AMA policies previously discussed. For example, the AMA advocates for:

- States to work toward unifying prescription standards and standard vocabularies
- The DEA to ease authentication requirements for prescribing controlled substances, including the scope of technology that is compliant with EPCS requirements
- HIT developers to improve interoperability between prescriber interfaces and mail-order prescription services and pharmacies

Other opportunities for improvements in e-prescribing processes are possible for a number of stakeholders.

- Implementation teams can conduct an annual audit to evaluate the number, frequency and user acknowledgment/dismissal patterns of e-prescribing system alerts and provide an audit report to the software vendors for their consideration in future releases.
- Health care organizations and implementation teams can improve prescriber end-user training and on-going education.
- Implementation teams can prioritize the adoption of features like Structured and Codified Sig formats that can help address quality issues.

- 1 • Implementation teams can enable functionality of pharmacy directories and preferred
- 2 pharmacy options. Leadership can encourage the practice of inputting a patient's preferred
- 3 pharmacy at registration, and re-confirming it upon check-in at all subsequent visits.
- 4 • Implementation teams can enhance EHR function to require residents assign an authorizing
- 5 attending physician.
- 6 • Organizational leadership can implement e-prescribing systems that feature more robust
- 7 clinical decision support, but ensure prescriber preferences are tested and seriously
- 8 considered in implementation decisions.
- 9 • Organizational leadership can assign e-prescribing as the default prescription method.
- 10 • The DEA can allow for lower-cost, high-performing biometric devices (e.g., fingerprint
- 11 readers on laptop computers and mobile phones) to be leveraged in two-factor
- 12 authentication.
- 13 • Health insurers, pharmacies and e-prescribing software vendors should enable real-time
- 14 benefit check applications that enable more up to date prescription coverage information
- 15 and allow notification when a patient changes health plans or a health insurer has changed
- 16 a pharmacy's network status.
- 17 • States can allow PDMP/EHR integration to reduce workflow burden and increase
- 18 efficiency.

19 20 CONCLUSION

21
22 The increase in use of e-prescribing and the incentive programs aimed at encouraging its adoption
23 have invigorated progress in improving the safety and efficiency of prescribing medications, but
24 there is still much room for improvement. While errors related to legibility issues or
25 misinterpretation of handwriting have been reduced, rates of medication errors have declined, and
26 organizations have experienced better patient satisfaction and cost savings, the trade-off is the
27 additional time prescribers spend maneuvering multiple platforms and completing data entry tasks
28 required to order prescriptions. Many physicians appreciate the benefits that e-prescribing has
29 provided, but recognize that improvements can still be realized to make them as safe as possible for
30 patients and efficient as possible for prescribers. These improvements may be possible through the
31 recommendations outlined in this report.

32 33 RECOMMENDATIONS

34
35 The Board of Trustees recommends that the following be adopted in lieu of Resolution 237-A-18
36 and that the remainder of this report be filed:

- 37
38 1. That our American Medical Association (AMA) reaffirm the following policies:
 - 39 a. H-125.979, "Private Health Insurance Formulary Transparency"
 - 40 b. D-120.956, "Electronic Prescribing and Conflicting Federal Guidelines"
 - 41 c. H-120.941, "e-Prescribing of Scheduled Medications"
 - 42 d. D-120.958, "Federal Roadblocks to E-Prescribing"
 - 43 e. D-120.945. "Completing the Electronic Prescription Loop for Controlled Substances"
 - 44 (Reaffirm HOD Policy)
- 45
46 2. That the second paragraph of AMA Policy D-120.972, "Electronic Prescribing," be rescinded
47 as having been fulfilled by this report. (Rescind HOD Policy)
- 48
49 3. That our AMA encourage health care stakeholders to improve electronic prescribing practices
50 in meaningful ways that will result in increased patient safety, reduced medication error,

1 improved care quality, and reduced administrative burden associated with e-prescribing
2 processes and requirements. Specifically, the AMA encourages:

- 3
- 4 • E-prescribing system implementation teams to conduct an annual audit to evaluate the
- 5 number, frequency and user acknowledgment/dismissal patterns of e-prescribing system
- 6 alerts and provide an audit report to the software vendors for their consideration in future
- 7 releases.
- 8 • Health care organizations and implementation teams to improve prescriber end-user
- 9 training and on-going education.
- 10 • Implementation teams to prioritize the adoption of features like structured and codified Sig
- 11 formats that can help address quality issues.
- 12 • Implementation teams to enable functionality of pharmacy directories and preferred
- 13 pharmacy options.
- 14 • Organizational leadership to encourage the practice of inputting a patient's preferred
- 15 pharmacy at registration, and re-confirming it upon check-in at all subsequent visits.
- 16 • Implementation teams to establish interoperability between the e-prescribing system and
- 17 the EHR to allow prescribers to easily confirm continued need for e-prescription refills and
- 18 to allow for ready access to pharmacy choice and selection during the refill process.
- 19 • Implementation teams to enhance EHR and e-prescribing system functions to require
- 20 residents assign an authorizing attending physician.
- 21 • Organizational leadership to implement e-prescribing systems that feature more robust
- 22 clinical decision support, and ensure prescriber preferences are tested and seriously
- 23 considered in implementation decisions.
- 24 • Organizational leadership to designate e-prescribing as the default prescription method.
- 25 • The DEA to allow for lower-cost, high-performing biometric devices (e.g., fingerprint
- 26 readers on laptop computers and mobile phones) to be leveraged in two-factor
- 27 authentication.
- 28 • States to allow integration of PDMP data into EHR systems.
- 29 • Health insurers, pharmacies and e-prescribing software vendors to enable real-time benefit
- 30 check applications that enable more up to date prescription coverage information and allow
- 31 notification when a patient changes health plans or a health insurer has changed a
- 32 pharmacy's network status. (New HOD Policy)

Fiscal Note: Minimal - Less than \$500

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