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Arizona Health Care Cost Containment System (AHCCCS)  
Acute-care, ALTCS E/PD, ALTCS DDD, AIHP, DBHS, and Integrated Care Plans  
Performance Improvement Project:  
**E-Prescribing**

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*Creation Date:* January 2014

*Implementation Date:* October 1, 2014

**Background:**

The development of health information technology, including electronic prescribing (e-prescribing) was meant to improve the quality of healthcare for patients as well as efficiency for providers. E-Prescribing is a clinicians' ability to electronically send an accurate, error-free and understandable prescription directly to a pharmacy from the point-of-care. Thus, clinicians can safely and efficiently manage patients' medications while reducing the risk for errors. Additional benefits include reducing phone calls between clinicians and pharmacies and providing patient convenience by avoiding additional trips to pharmacies to drop off prescriptions.

A National Ambulatory Medical Care Survey identified that 880.5 million visits were made to a physician's office in 2001 and 61.9 percent of these visits resulted in a clinician prescribing at least one medication.<sup>(1)</sup> Data continues to show preventable errors in utilizing the standard handwritten paper method to communicate a medication between a prescriber and a pharmacy.

A Cornell medical school study found that clinicians make seven times fewer errors, decreasing from 42.5 per 100 prescriptions to 6.6 per 100 prescriptions after one year, when using an electronic system rather than writing prescriptions by hand.<sup>(2)</sup> This includes completely eliminating illegibility errors, which were at a rate of 87.6 per 100 prescriptions and identifying that two in five handwritten prescriptions within community practices had errors.<sup>(2)</sup> Prescribing errors occur at a much higher rate within community based settings, demonstrated by a study that found a 27.8 percent error rate in a community setting versus 11 percent in an academic-affiliated primary care clinic.<sup>(3)</sup>

Adverse drug events can impact both patients and hospitals. The Agency for Healthcare Research and Quality has identified that 770,000 injuries occur each year from adverse drug events resulting in hospitalizations and/or deaths and can cost hospitals up to 5.6 million per year.<sup>(4)</sup> Another study found the average length of stay at a hospital as a result of an adverse drug reaction is 6.69 days and estimates individual cost to be over \$2,000.00 per event.<sup>(5)</sup> Sending a clear and legible prescription electronically can reduce mistakes related to medication types, dosages, and member information. This can also assist pharmacies in identifying potential problems related to medication management and identifying potential reactions members may encounter, especially for those taking multiple medications.

The perception of both clinicians and pharmacy staff is imperative to the continuation and success of e-prescribing. The National Institute of Health confirms the value of e-prescribing for patient safety among clinicians within a study concluding that 78 percent of clinicians felt that e-prescribing was better than other methods of use.<sup>(6)</sup> Pharmacist and pharmacy technicians also reported several strengths to e-prescribing including: quick access to prescriptions, consistency in prescription formatting and legibility.<sup>(7)</sup>

**Purpose:**

The purpose of this Performance Improvement Project is to increase the number of prescribers electronically prescribing prescriptions and to increase the percentage of prescriptions which are submitted electronically in order to improve patient safety.

**AHCCCS Goal**

In alignment with the payment reform e-prescribing initiative, the goal is to demonstrate a statistically significant increase in the number of providers submitting electronic prescriptions and the number of electronic prescriptions submitted followed by increase sustainment for one year.

**Measurement Period**

Baseline Measurement: October 1, 2013 through September 30, 2014  
First Re-measurement: October 1, 2015 through September 30, 2016  
Second Re-measurement: October 1, 2016 through September 30, 2017

**Study Question**

What is the number and percent, overall and by Contractor, of AHCCCS-contracted providers which prescribe at least one prescription electronically? What is the number and percent, overall and by Contractor, of total prescriptions prescribed electronically by AHCCCS-contracted prescribers?

**Population**

This study will include members in the following populations:

- ALTCS Elderly and Physically Disabled (E/PD) members, ages 0-64 and 65+
- ALTCS Developmentally Disabled (DD) members, ages 0-64 and 65+
- Acute-care members - Medicaid, ages 0-64 and 65+
- Acute-care members - KidsCare, ages 0-18
- Comprehensive Medical and Dental Program (CMDP) members, ages 0-19
- Children's Rehabilitative Services members, aged 0-20 and 21+
- DBHS members, aged 0-64 and 65+
- DBHS Integrated members, aged 18-64 and 65+
- American Indian Health Plan members, aged 0-64 and 65+

**Population Exclusions**

The sample frame will exclude:

- Members with no medications prescribed
- Prescriptions designated as refills of an existing prescription

**Population Stratification**

The population will be stratified by Contractor. The population will also be stratified by age groups\*:

- 0 through 20 years old
- 21 through 64 years old
- 65 years and older



\* Note: Each Contractor's performance will be evaluated based on its aggregate rate for the Medicaid population for this indicator. Data will be evaluated for the 65+ population before final results are shared; if it is determined that sufficient Medicare data has not been received to support the age-band reporting, that population group will not be included in the performance rate.

**Sample Frame:**

There will be no sample frame for this study. All prescribers and prescriptions that meet the criteria will be evaluated to determine the measure rates.

**Sample Selection:**

*Not applicable.*

**Indicator Criteria**

- Indicator 1: The percent (overall and by Contractor) of AHCCCS-contracted providers who prescribed at least one electronic prescription.
- Indicator 2: The percent (overall and by Contractor) of prescriptions prescribed by an AHCCCS contracted provider sent electronically.

**Numerator**

- Indicator 1: The number of providers in the denominator who sent at least one prescription electronically to a pharmacy during the measurement period
- Indicator 2: The number of prescriptions in the denominator which were sent electronically to a pharmacy during the measurement period

**Denominator**

- Indicator 1: The total number of providers contracted with AHCCCS who prescribed at least one prescription using any method during the measurement period
- Indicator 2: The total number of prescriptions sent to a pharmacy using any method during the measurement period

**Data Sources:**

AHCCCS administrative data will be used to identify indicator data. AHCCCS will collect prescription origination information from its encounter system. It is important to note, only approved adjudicated claims and encounters are included in this study.

For the purposes of defining an e-prescribed prescription, AHCCCS will be looking at those prescriptions generated through a computer-to-computer electronic data interchange protocol, following a national industry standard and identified by Origin Code 3.

**Data Collection:**

This study will be conducted via administrative review of the data sources listed above.

**Confidentiality Plan:**

AHCCCS and its Contractors maintain compliance with the Health Insurance Portability and Accountability Act (HIPAA) requirements. Only AHCCCS employees who analyze data for this project will have access to study data. Requested data are used only for the purpose of performing health care operations, oversight of the health care system, or research. Member names are never identified or used in reporting.

**Quality Assurance Measures:**

Data files will be thoroughly reviewed prior to detailed validation to ensure that all study perimeters are accurate and complete. Once rates have been established, AHCCCS will track and trend data to ensure consistency with internal data and similar aligned initiatives. Additionally external reports will be evaluated to determine rate alignment for comparative purposes.

**Data Validation:**

The Data Validation Studies examines professional encounters and facility encounters. These studies compare paid claims files by the Contractors and encounters sent to AHCCCS by the Contractors. The studies produce an overall accuracy rate based on receipt, accuracy and timeliness. These studies are prepared for Contractors under ALTCS, acute care and behavioral health contract types in accordance with RFP specifications listed in the programmatic contract procurement process.

The sample frame will be validated to ensure that members meet criteria for inclusion in the study and that data collected from administrative sources (e.g., AHCCCS encounters) meet numerator and denominator criteria. These data will be validated through review of a random sample of members included in the denominator as well as those not selected for the denominator and a random sample of numerator data.

**Analysis Plan:**

The data will be analyzed in the following ways:

- The numerator will be divided by the denominator to determine the indicator rate.
- Results will be analyzed as a statewide aggregate and by individual Contractor.
- Results will be analyzed by urban and rural county groups.
- Results may be analyzed by member race/ethnicity; i.e. Caucasian, African American, Hispanic Asian/Pacific Islander, Native American/American Eskimo, and Other/Unknown, as well as any other stratifications deemed appropriate.

**Comparative Analysis:**

For the purpose of comparative analyses, the following will be considered when applicable and meaningful to future improvement:

- Results will be compared with prior years to identify changes and trends.
- Results by placement will be compared with each other.
- Rural and urban area results will be compared to identify any significant disparities in geographic area types.
- Individual Contractor results will be compared with each other, the statewide aggregate, and the AHCCCS goal.



- Results may be compared by other stratifications as deemed appropriate (i.e. age, race/ethnicity, gender).
- Results will be compared to the results of any other comparable studies, if available.
- In the future, differences between overall baseline study results and overall remeasurement results will be analyzed for statistical significance and relative change.

**Limitations:**

*None noted at this time.*

## Works Cited

1. **Hing, Asther, Cherry, Donald K and Woodwell, David A.** *National Ambulatory Medical Care survey: 2001 Summary.* Hyattsville : Centers for Disease Control and Prevention, 2003.
  2. *Electronic Prescribing Improves Medication Safety in Community-Based Office Practices.* **Kaushal, Rainu, et al., et al.** 6, Alexandria : Springer, 2010, *Journal of General Internal Medicine*, Vol. 25, pp. 530-536.
  3. *Ambulatory prescribing errors among community-based providers in two states.* **Abramson, Erika L, et al., et al.** s.l. : BMJ Group, 2012, *Jama*, Vol. 19, pp. 644-648.
  4. **Quality, Agency for Healthcare Research and.** Research Tools & Data. *AHRQ.* [Online] U.S. Department of Health and Human Services. [Cited: March 3, 2014.] <http://www.ahrq.gov/research/findings/factsheets/errors-safety/aderia/index.html>.
  5. *Adverse Drug Events in Hospitalized Patients: Excess Length of Stay, Extra Costs, and Attributable Mortality.* **Classen, David C, et al., et al.** 4, s.l. : *Jama*, 1997, *The Journal of the American Medical Association*, Vol. 277.
  6. **Lapane, Kate L, et al., et al.** *E-Prescribing and Patient Safety: Results from a Mixed Method Study.* Bethesda : National Institute of Health, 2011.
  7. *Retail pharmacy staff perceptions of design strengths and weaknesses of electronic prescribing.* **Odukoya, Olufunmilola and Chui, Michelle A.** 6, s.l. : BMJ Group, 2012, *Jama*, Vol. 19.
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For general questions regarding this methodology, please contact Jakenna Lebsock, Quality Improvement Manager, at 602-417-4229 or at [Jakenna.Lebsock@azahcccs.gov](mailto:Jakenna.Lebsock@azahcccs.gov). For technical questions regarding this methodology, please contact Lucy Valenzuela, Data/Research Analyst, at 602-417-4753 or [lucy.valenzuela@azahcccs.gov](mailto:lucy.valenzuela@azahcccs.gov).