MEMO

TO: SUPERSCRIPTS MANAGEMENT BOARD
FROM: THANH NGUYEN
DATE: 18 NOVEMBER 2022
RE: SUMMATIVE ANALYSIS REGARDING eRx ADOPTION AND USAGE IN DIFFERENT STATES FROM JANUARY 2016 TO APRIL 2019

This is a summative analysis of the adoption and use of electronic prescription (eRx) in the United States from January 2016 to April 2019.

Total e-Prescribers per month: The overall number of monthly e-Prescribers was low at the beginning but startlingly high at the end of the period. The **Pacific Region** had the most eRx prescribers overall per month **(46,902) in April 2019,** while the **national average was 8,872** in total. The large disparity between the highest and lowest values in this situation may be due to a time difference. However, in January 2016, the highest monthly eRx was likewise in Pacific, at **17,477**, which was significantly greater than the national average. This observation implies that monthly eRx adoption is influenced by additional factors. To increase the rate of eRx adoption in the United States, socioeconomic factors can be the subject of additional research.
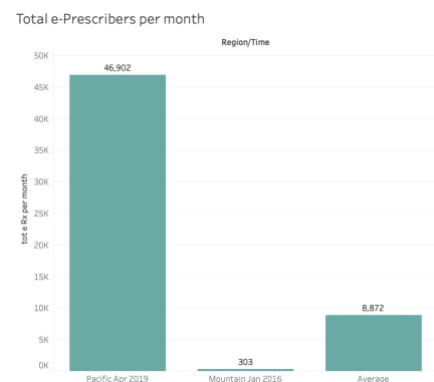

Figure 1: Total e-Prescribers per month

The level of eRx adoption: Generally, eRx adoption level was relatively low. During the observed months, nearly **88%** had a **low or very low** adoption level. In **9%** of the months, the adoption level was **moderate**, and in only about **4%** of the months, it was **high or very high**.
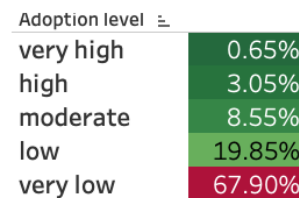
Additional analysis revealed that *the level of adoption in the United States was initially low, but it appeared to increase over time*. The **highest** number of low and very low was in 2016. Then, the number steadily **declined** until it reached 494 months in 2018, (25% of the total). In contrast, moderate, high, and very high adoption levels experienced the **lowest** number of adoptions in 2016. After that, this group **increased**, reaching 106 months over 2000 months recorded in 2018 (5% of all data months).
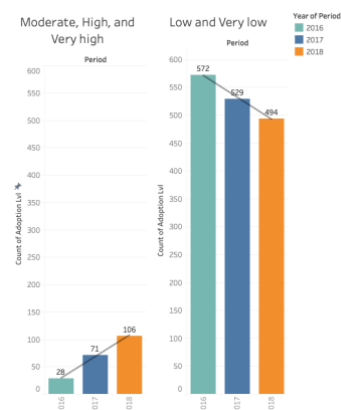
However, this ranking system for eRx adoption **did not reflect the growth in adoption over time**. The suggestion is to evaluate the growth rate using percentage change. In addition, there are additional socioeconomic factors that were not reflected in our dataset that can strongly influence the validity of our result.

Figure 2: eRx adoption level across the US

Figure 3: eRx adoption level over time

Months that retail community pharmacies actively e-prescribing on the Surescripts Network:

The percentage of active e-prescribing months varied considerably between regions. Only three out of nine regions were fully active (100%) e-prescribing, namely the East North Central, Middle Atlantic, and New England. The average number of e-prescribing active months was 96%. The statistics for the Pacific and South Atlantic regions were 97% and 98% above the national average, respectively. In contrast, there were four regions with values below the mean: East South Central (94%), Mountain (94%), West North Central (92%), and West South Central (91%), with **West South Central** having the lowest percentage.

This analysis suggests that the use of e-prescribe can be increased, particularly in regions where it is less than 95%.
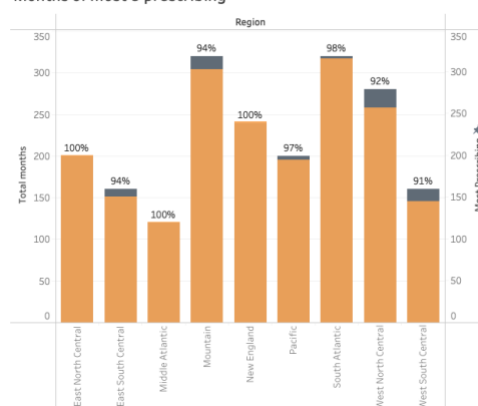

Figure 4: Total and percentage of months of actively e-prescribing

Active e-prescribing rates by region and state per year:

In general, from *Table 1*, **New England** had their average rate the highest throughout the period. In 2016, the lowest was 85.85% in West North Central. In 2017 and 2018, it was **West South Central** at 90.67% and 92.23% respectively.

Table 2 offers a detailed examination of the average in their states. With 98.25%, 97.83%, and 97.67%, respectively, Rhode Island, Maine, and New Hampshire were **the top three states from New England**. **The three bottom average rates were from West South Central**, Arkansas (86.08%), Louisiana in 2016 (82.08%), and Louisiana in 2017 (87.58%).

In 2018, Louisiana also had the lowest average rate of active e-prescribing among states in the same region. Therefore, the statistics indicate that **there is more work to be done in the West South Central region, notably in Louisiana, which is the most problematic state.**

Average pct_pharm_e_Rx Years			
Region	2016	2017	2018
East North Central	91.53%	94.37%	96.03%
East South Central	87.65%	92.71%	93.90%
Middle Atlantic	90.86%	94.39%	95.78%
Mountain	89.77%	93.45%	95.23%
New England	94.08%	95.24%	96.28%
Pacific	89.18%	92.30%	94.95%
South Atlantic	92.01%	94.58%	95.73%
West North Central	85.85%	91.93%	93.56%
West South Central	86.60%	90.67%	92.23%

Table 1: Active e-prescribers over the years in different regions

Average of pct_pharm_e_Rx Years			
State	2016	2017	2018
New England			
Connecticut	91.17%	91.83%	92.33%
Maine	94.83%	97.33%	97.83%
Massachusetts	95.58%	96.25%	96.17%
New Hampshire	93.17%	95.42%	97.67%
Rhode Island	97.00%	96.75%	98.25%
Vermont	92.75%	93.83%	95.42%
West South Central			
Arkansas	86.08%	91.50%	91.83%
Louisiana	82.08%	87.58%	91.83%
Oklahoma	89.42%	92.08%	92.75%
Texas	88.83%	91.50%	92.50%

Table 2: Top and bottom states in the leading regions from Figure 5

Conclusion

The statistics indicated a growing but slow trend in the adoption rate of eRx in the United States. Across different locations, the disparities in adoption levels were notably large, indicating the influence of additional socioeconomic factors. Further study is necessary to identify the underlying causes of this issue to improve the level of eRx adoption. Overall, the results show an increase in eRx adoption in the United States.

The examination of monthly and average active e-prescribing community pharmacies found that e-prescribing was fully operational in some regions while behind in others. The West South Central region, especially the most challenging state, Louisiana, requires additional attention.