

# Impact of Two-Way Texting for Refill Set-Up on a Phenylketonuria (PKU) Patient Population

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## BACKGROUND

- Phenylketonuria (PKU) is a rare inherited disorder in which patients experience increased levels of the amino acid phenylalanine (phe). When not managed, phe levels can build up in the body, leading to cognitive impairment, developmental issues, and other serious health implications<sup>1</sup>
- Traditional forms of communication, including phone calls are not convenient for patients to set-up refill orders and may be stressful for patients with cognitive impairment
- Sapropterin dihydrochloride is approved for responding PKU patients along with a low phe diet. By missing doses of sapropterin, PKU patients may experience less mental clarity, and further exacerbate nonadherence by forgetting to order
- Additional methods for setting up refills, including two-way texting services make it more convenient for patients to set up refill orders and may lead to increased adherence

## METHODS

- **Inclusion criteria:**
  - Fairview Specialty Pharmacy patient with a diagnosis of phenylketonuria on sapropterin
  - Access to texting services with consent obtained
  - Medication possession ratio (MPR) of less than 90%
- **Exclusion criteria:**
  - Unwilling to provide consent for enrollment
  - No established MPR or fill record with Fairview Specialty Pharmacy
- **Primary endpoint:** Change in MPR of patients who enroll in the texting program over six months
- **Statistical analysis** was conducted utilizing a paired t-test to compare average MPRs before and after enrollment in the texting program

## OBJECTIVE

To assess the impact of texting technology for refill reminders and order set up on adherence through measurement of refill rates in a specialty pharmacy patient population

## TABLES/CHARTS

Figure 1. Patient enrollment on most recent analysis

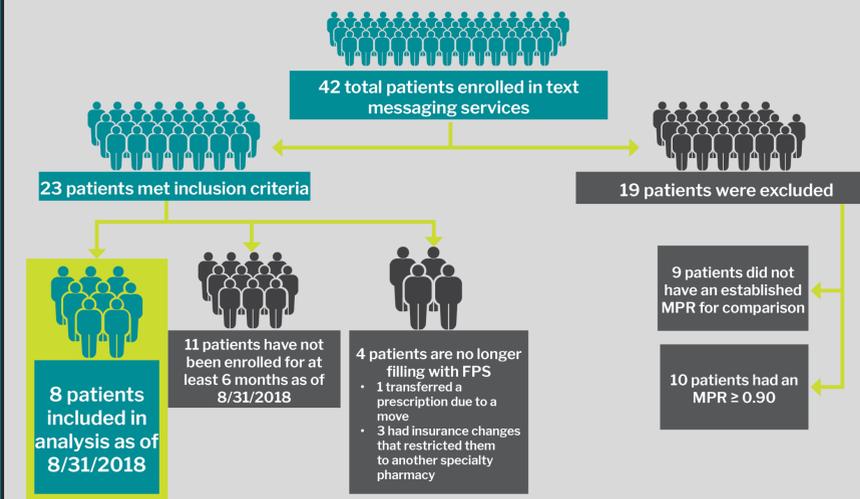


Figure 2. Most recent analysis after 6 months enrolled in texting (n=8)

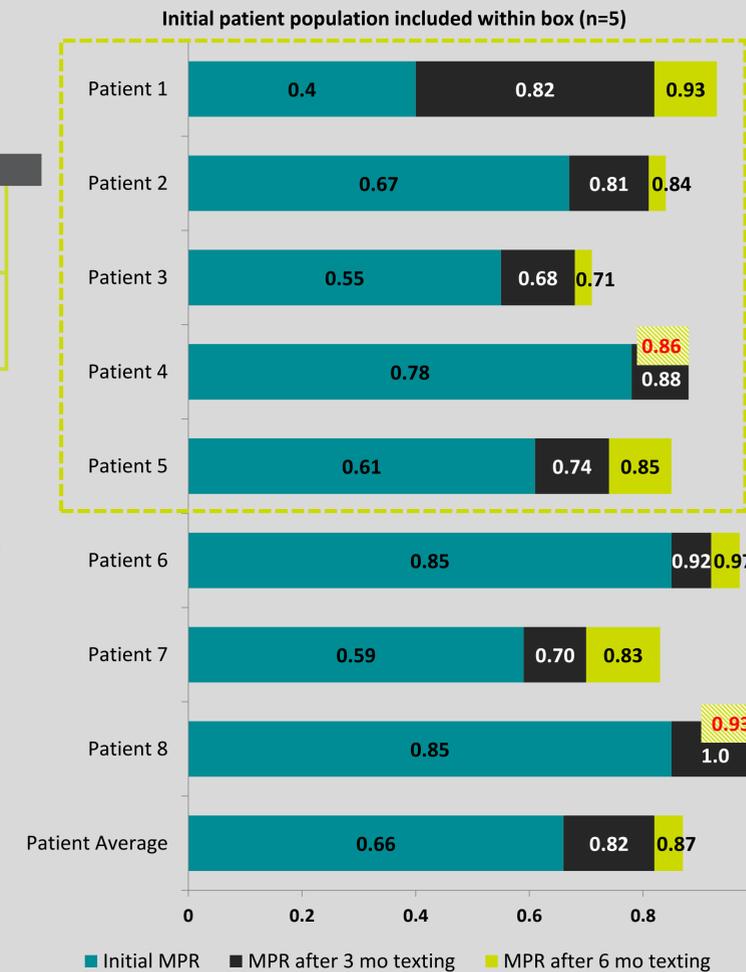
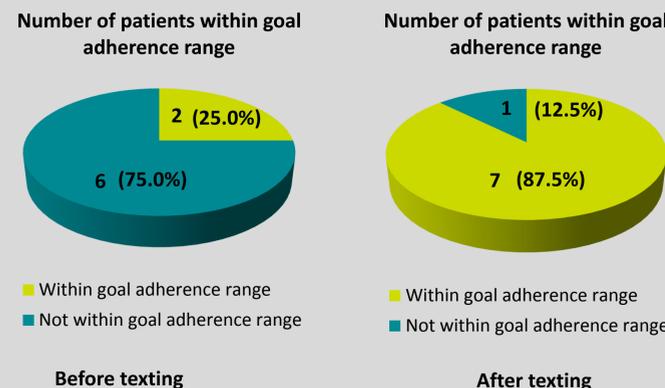


Figure 3. Patients within goal range of MPR ≥ 0.80 on most recent analysis (n=8)



## RESULTS

- 42 PKU patients enrolled in texting services with 23 patients meeting inclusion criteria for analysis (Figure 1)
- 8 patients were included for analysis as of 8/31/2018
- 11 patients have not been enrolled in services for a full 6 months, but will be included in future analysis
- 4 enrolled patients transferred prescriptions and thus, ongoing MPRs could not be calculated
- **Initial analysis**
  - Eligible patients enrolled in two-way texting for six months (n=5) saw an average increased MPR of 0.24 over that time period (0.60 to 0.84, 95% CI -0.02-0.45; p=0.039; Figure 2, initial patient box)
- **Most recent analysis**
  - Eligible patients enrolled in two-way texting for three months (n=8) saw an average increased MPR of 0.16 over that time period (0.66 to 0.82, 95% CI 0.06-0.25; p=0.005; Figure 2)
  - Eligible patients enrolled in two-way texting for six months (n=8) saw an average increased MPR of 0.20 over that time period (0.66 to 0.86, 95% CI 0.08-0.33; p=0.006; Figure 2)
  - 25% of patients were within the goal MPR range of ≥ 0.80 before the texting project and 87.5% of patients were within the goal MPR range after texting enrollment (62.5% increase of patients within goal adherence range; Figure 3)

## CONCLUSIONS

- Results show a statistically significant increase in adherence for patients enrolled in two-way texting
- Additional analysis will be done once all eligible patients have been enrolled in texting services for 6 months

## REFERENCES

1. Phenylketonuria. U.S. National Library of Medicine. 2018. <https://ghr.nlm.nih.gov/condition/phenylketonuria>.
2. Kuvan®(Sapropterin dihydrochloride ) [package insert]. Novato, CA: BioMarin Pharmaceutical Inc; 2015.