

# Trends in Respiratory Pathogen Testing with Individual Pathogen, Small Panel, or Large Panel Polymerase Chain Reaction (PCR) Tests Before and After the Coronavirus Disease 2019 (COVID-19) Public Health Emergency (PHE) Ended

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## BACKGROUND

- During the COVID-19 pandemic, development of respiratory pathogen tests expanded beyond individual tests for COVID-19 to small and large panel multi-pathogen tests.<sup>1</sup>
- While larger panels may simplify diagnosis, testing for more than the most common circulating pathogens may be unnecessary for otherwise healthy individuals.
- Prior research evaluated the use of tests during the timeframe overlapping with the COVID-19 pandemic, but more recent data are needed due to availability of new panel tests and changes in clinical practices post-pandemic.<sup>2</sup>

## OBJECTIVES

- This study reviewed trends in respiratory PCR testing in the year before and after the end of the PHE on 05/11/2023.<sup>3</sup>

## METHODS

### Study design

- Design: Descriptive, retrospective analysis using de-identified administrative claims for commercial and Medicare Advantage enrollees in the Optum Labs Data Warehouse
- Identification period: May 12, 2022 - May 11, 2024
- PHE end date: May 11, 2023
- Pre-period: May 12, 2022 – May 11, 2023
- Post-period: May 12, 2023 – May 11, 2024

### Inclusion criteria

- ≥1 claim with a procedure code for a respiratory PCR test for COVID-19, influenza, or RSV, measured in each calendar month of the identification period (12<sup>th</sup> of the month through 11<sup>th</sup> of the following month, see Figure 1)
- Adult aged ≥18 years as of the first PCR testing date of the month
- Non-missing age or gender on the first PCR testing date of the month

### Study measures

- In each monthly period, the percentage of enrollees with ≥1 respiratory PCR test was reported out of the available administrative claims population meeting the age requirement and enrolled at least one day
- Tests on the patient’s first test date were categorized as individual pathogen, small panel (2-5 pathogens), large panel (≥6 pathogens), or multiple types.

## DISCUSSION

- Overall, 5,947,807 observations (56% commercial, 44% MA) of respiratory testing were identified, 72% before and 28% after the PHE end date (Figure 1).
- Test type distribution was 72% individual pathogen, 20% small panel, 2% large panel, and 6% multiple before the PHE end date and 36% individual pathogen, 45% small panel, 5% large panel, and 14% multiple after the PHE end date (Figure 2).
- Monthly rates of respiratory testing among enrollees ranged between 0.8% and 3.1% in the year before and 0.4% and 1.3% in the year after the PHE end date (Figure 3).

### Limitations

- Test results were not available in the database to track trends in infection rates or infecting pathogens.
- The types of tests that were available changed over the study timeframe as new tests were developed. Large panel tests entered the market at later timepoints.
- Study data primarily captured tests administered in the outpatient setting. Tests administered at home or in the hospital may not have been captured.

## RESULTS

Figure 1. Number of Observations by Insurance Type

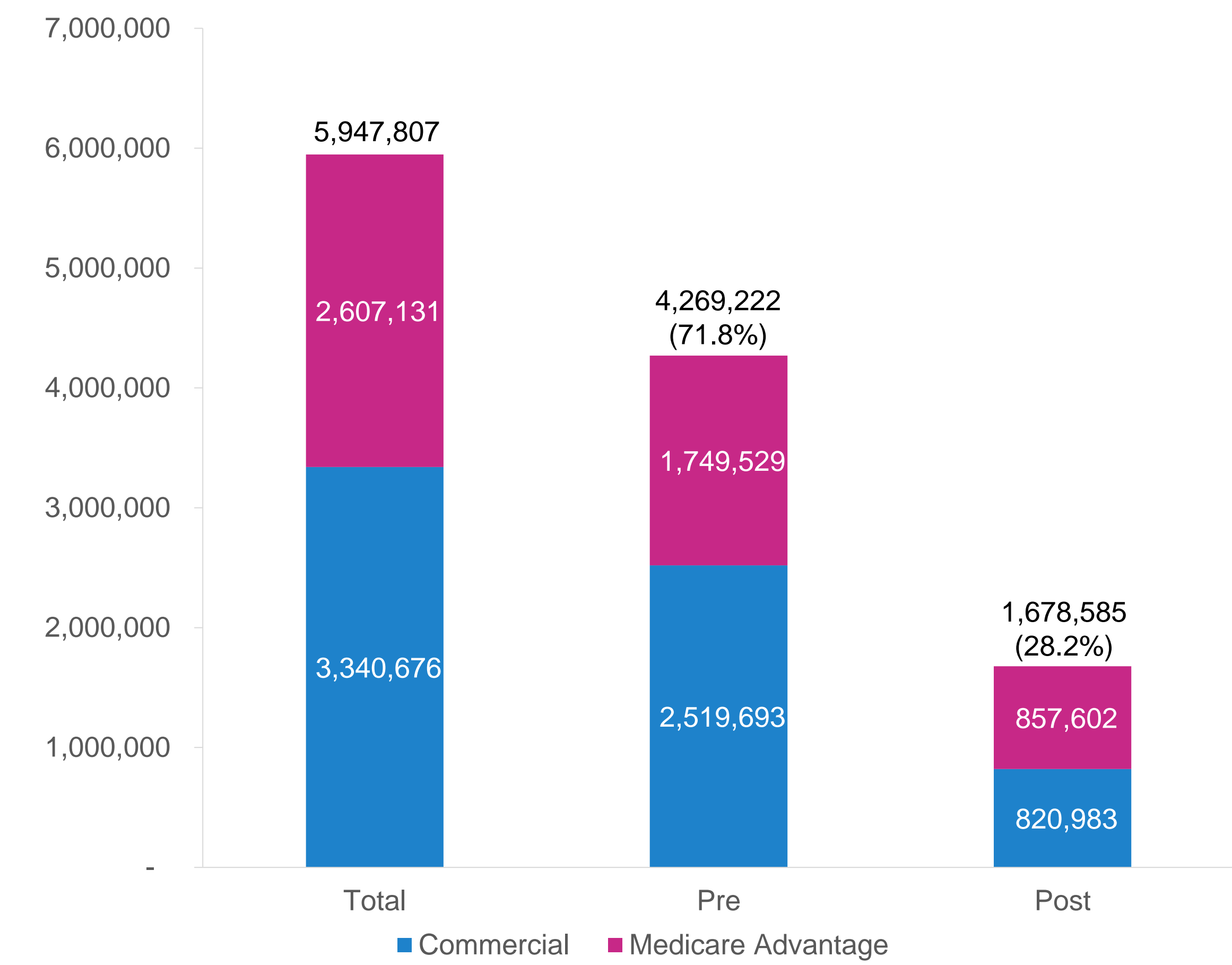


Figure 2. Test Type by Time Period

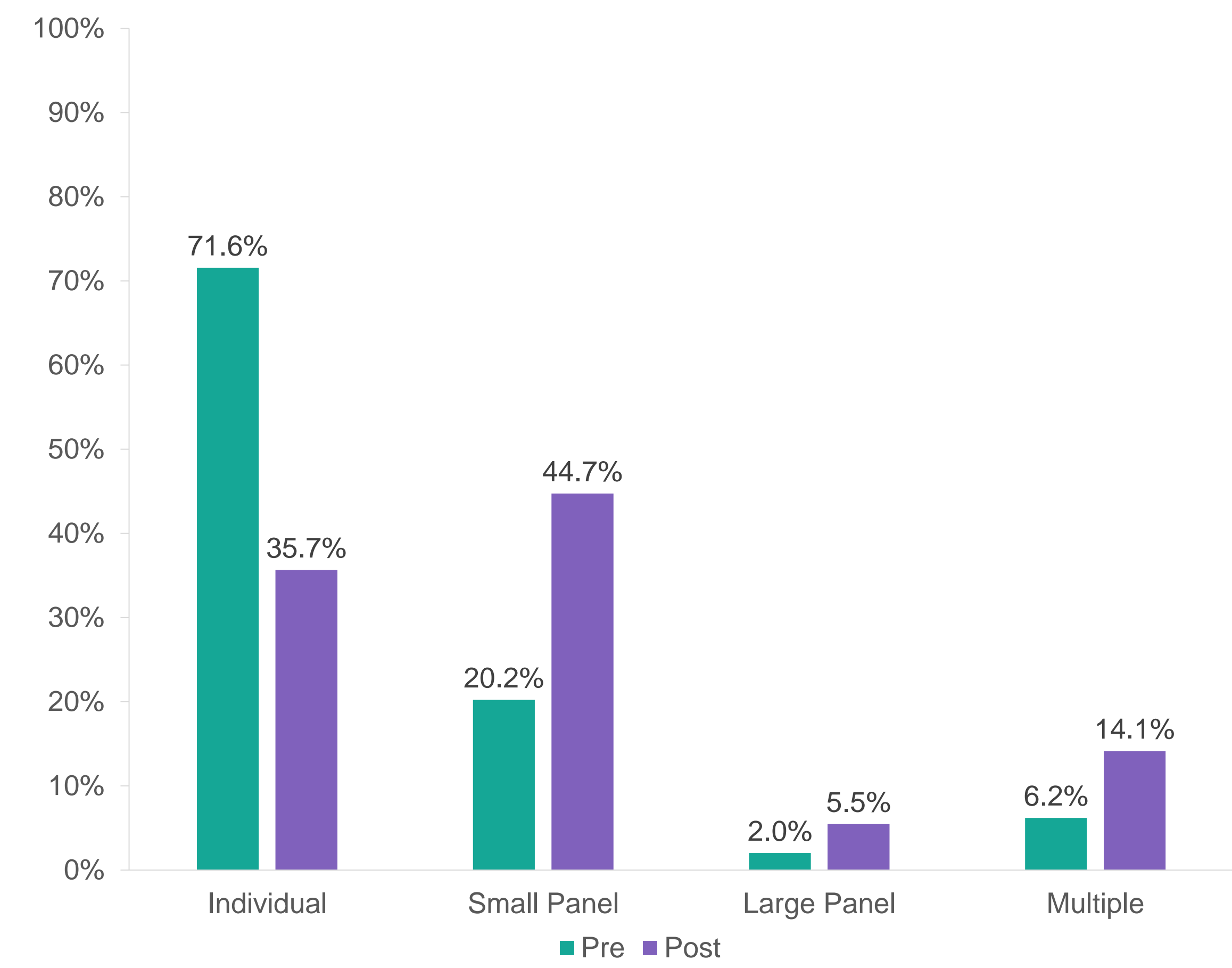


Figure 3. Overall Monthly Rate of Testing by Insurance Type

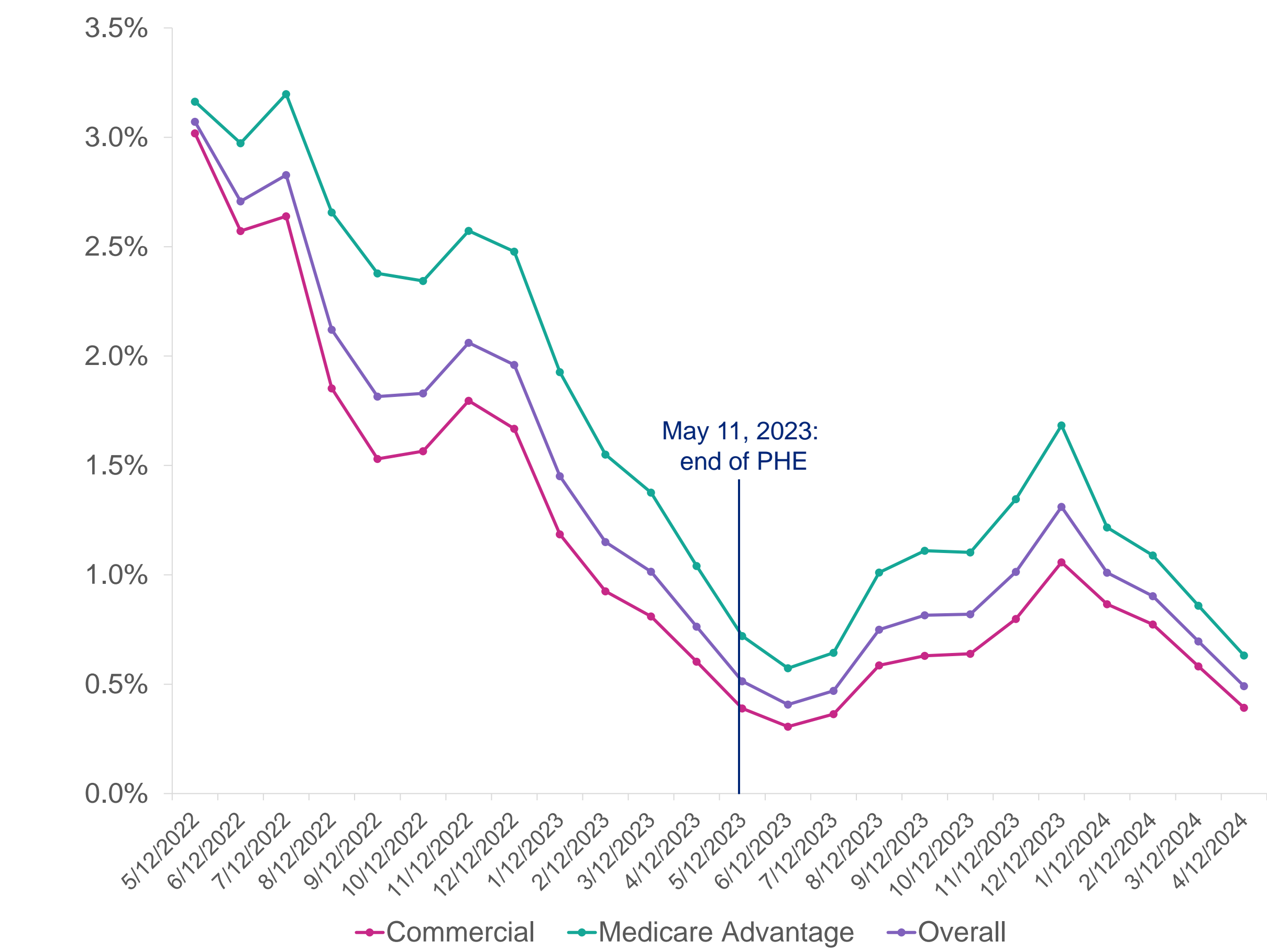


Figure 4. Overall Monthly Rates of Testing, by Testing Type

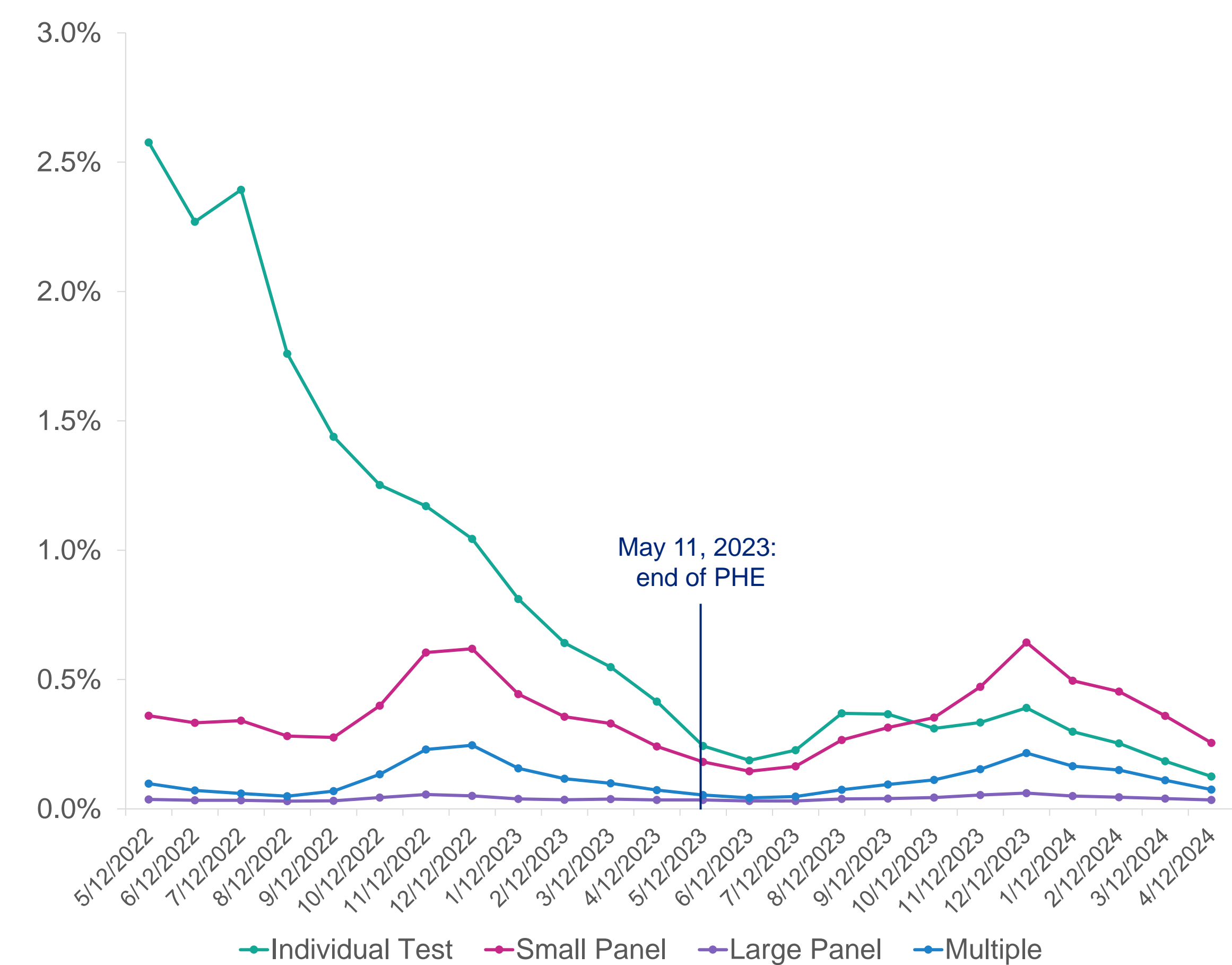


Figure 5. Commercial Monthly Rates of Testing, by Testing Type

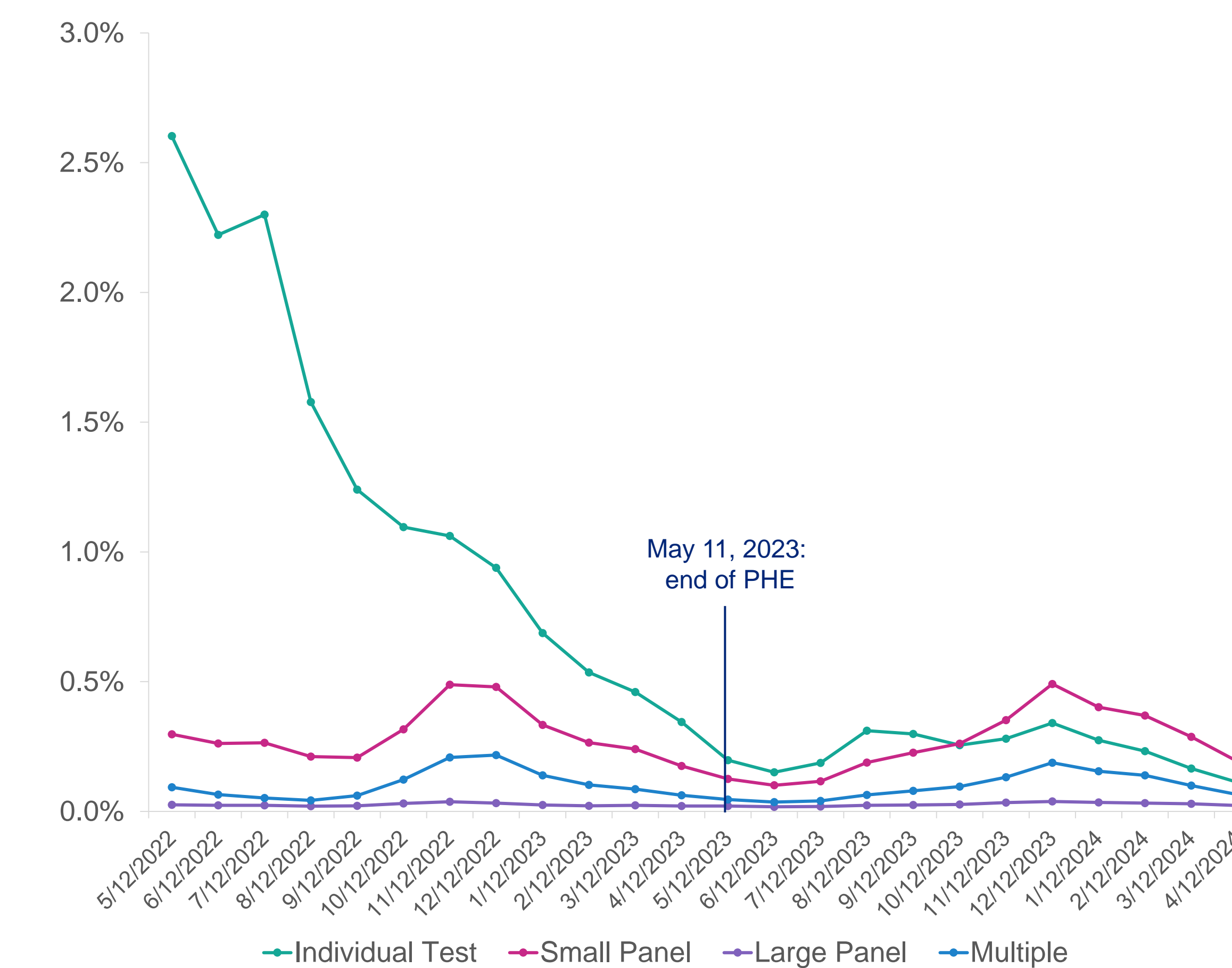
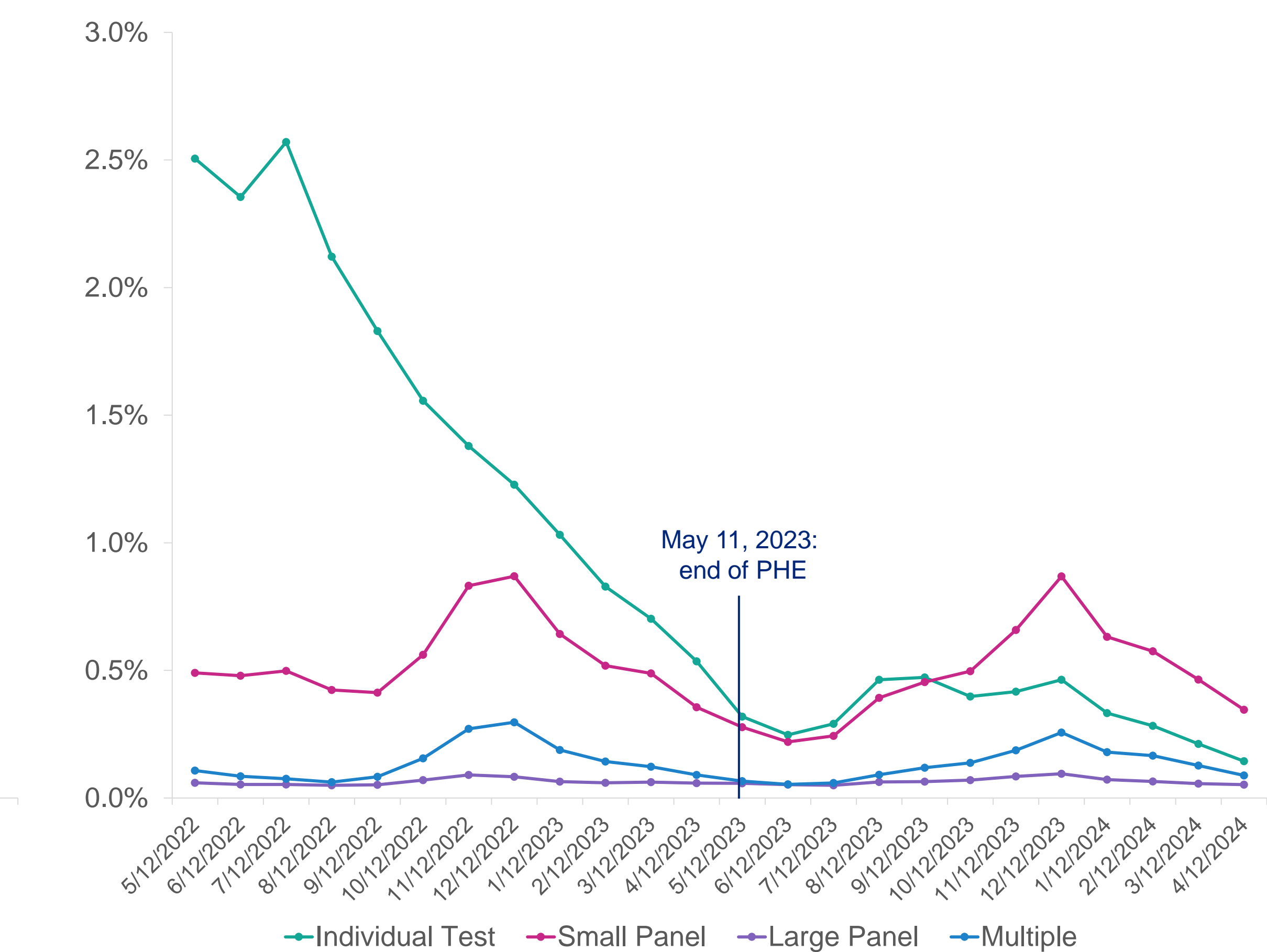


Figure 6. Medicare Advantage Monthly Rates of Testing, by Testing Type



## CONCLUSIONS

- Rates of PCR respiratory testing declined after the COVID-19 PHE end date.
- Test type shifted from primarily individual pathogen tests during the PHE to small panel or multiple test types after the PHE end date.
- While use of large panels doubled among patients with testing, overall rates of large panel testing remained low across the population.

### References

- Snyder, Mike. The Respiratory Panel Challenge Now Faced by Payers with the Ending of the PHE. <https://www.managedhealthcareexecutive.com/view/the-respiratory-panel-challenge-now-faced-by-payers-with-the-ending-of-the-phe>. URL. Published May 22, 2023. Accessed May 2, 2024.
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- End of the Federal COVID-19 Public Health Emergency (PHE) Declaration. [https://archive.cdc.gov/www\\_cdc\\_gov/coronavirus/2019-ncov/your-health/end-of-phe.html#:~:text=May%2011%2C%202023%2C%20marks%20the,to%20the%20COVID%2D19%20pandemic](https://archive.cdc.gov/www_cdc_gov/coronavirus/2019-ncov/your-health/end-of-phe.html#:~:text=May%2011%2C%202023%2C%20marks%20the,to%20the%20COVID%2D19%20pandemic). Published September 12, 2023. Accessed May 3, 2024.