

# Evaluation of the implementation of Law No. 63 of 2017 and the impact on claims for oral health services in the population from 1 to 16 years of age of the Puerto Rico Government Health Plan.

Alex Cabrera, MS, Rose Diaz, MS, Marcos Felici-Giovanini, MSE, MPH, Krystel Ruiz-Serrano, MS, Elaine M. Pagan, DMD, MSD, Monica Torres, MBA, Idania Rodriguez, MS, PhD



## SUMMARY

Puerto Rico (PR) has had a high prevalence of caries in infants at an early age (47% to 53%). This study evaluates the implementation of Law No. 63 of 2017 (Establishes the delivery of an Oral Examination Certificate (CEO) in public and private schools for grades K, 2nd, 4th, 6th, 8th and 10th) and what has been the impact on claims for oral health services in the Government Health Plan. Through a descriptive analysis, the data from the CEO Compliance Report Surveillance System 2018-2022 and the claims made to the Government Health Plan during the 2016-2019 period were analyzed. In the first school year (2018-2019) of implementation of the Law, 23% of the students delivered the certificate, in 2019-2020 30%, in 2020-2021 25% and in 2021-2022 32%. When comparing 2019 to 2016, the largest percentage change in oral health claims was in the population impacted by the law (1-16 years). In 2019, there was an increase in the percentage of beneficiaries between the ages of 1 and 16 who reported at least one claim for oral health services. The four preventive services with the highest complaints among the population aged 1-16 in 2019 were: "Topical application of fluoride – excluding varnish" (19%), "Dental prophylaxis child" (14%), "Periodic oral evaluation" (12%) and "Comprehensive oral evaluation" (10%). Taking into account the results of this study, we can establish that the implementation of Law No. 63 of 2017 has contributed to the increase observed in claims for oral health services in the population from 1 to 16 years, thus proving its effectiveness. For this reason, it is important to continue monitoring and promoting compliance with it, as well as developing new studies that help us establish trends.

## INTRODUCTION

The prevalence of caries in infants in PR ranges from 47% to 53%, compared to 20% to 25% in the United States. When comparing unmet dental needs, the researchers found that 83% of children attending public school needed some form of dental care, compared to 27% attending private school. In order to mitigate the burden of oral health in the child population of PR, the Government of PR approved Law 63 of 2017, which aims to guarantee access to oral health services, promote early risk assessment and encourage prevention of oral diseases. The Law and its regulation No. 9055 establish that students in Kindergarten, 2nd, 4th, 6th, 8th and 10th grades present a CEO at the time of school enrollment in public and private schools on the island, in order to ensure that the student visits the dentist in the last year. Schools are required to submit the CEO's compliance and non-compliance report to the Oral Health Program on an annual basis. Due to the impact of hurricanes Irma and María, the first year of implementation began in January 2019. The second year was properly implemented in August 2019. Due to the limitations of the Covid-19 pandemic, the third year of the law began in January 2020. Finally, the fourth year of implementation was carried out in August 2021 through an electronic digital reporting system. The objective of this poster is to evaluate the implementation of the law and the impact it has had on the claims for oral health services in the school population of the Government of Puerto Rico Health Plan.

## METHODS

A descriptive analysis, such as totals, frequency distribution, and mean with standard deviation, was performed in order to assess the characteristics of oral health claims and CEO compliance. The percentage change between the 2016 and 2019 claims was calculated to assess the impact of the implementation of the CEO through Law 63 of 2017. To control for the impact of Hurricanes María and Irma on oral health claims, the 2016 as the base year for being the most stable at the time of making the comparisons. For the analysis of compliance with the law, the compliance report sent annually by the public and private schools of PR to the Oral Health Program of the Department of Health was used.

Figure 1. Percentage, number of students and schools in compliance with Law 63 of 2017 by year of implementation (2018-2022)

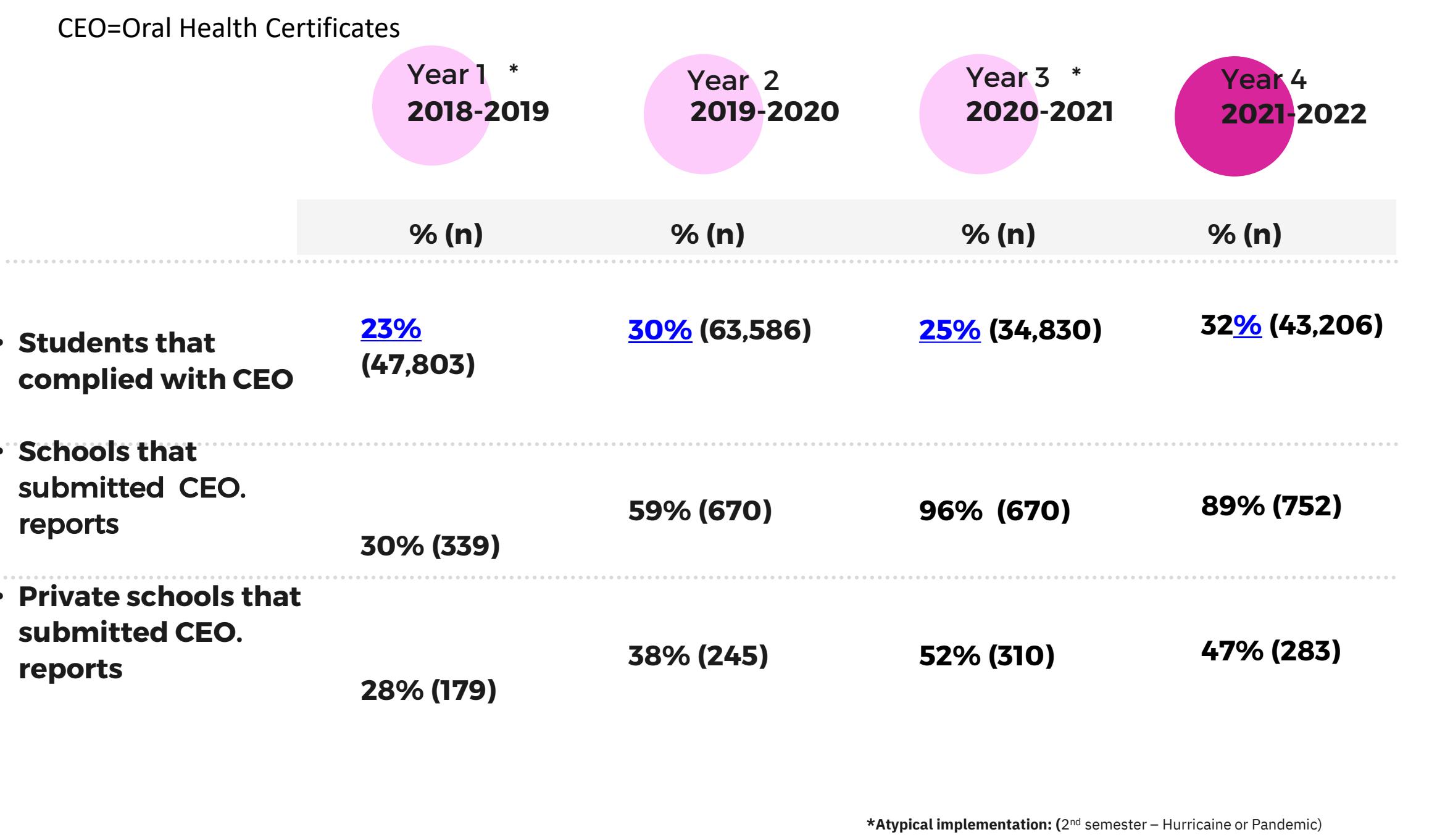


Figure 2. Total number of oral health claims in beneficiaries (1-16 years) of the PR Government Health Plan for 2016 and 2019

Year 2016 **1,227,394** Year 2019 **1,548,121** Increase of **320,727**

Figure 3. Percentage change and number of oral health claims by age group in beneficiaries of the PR Government Health Plan between 2016-2019

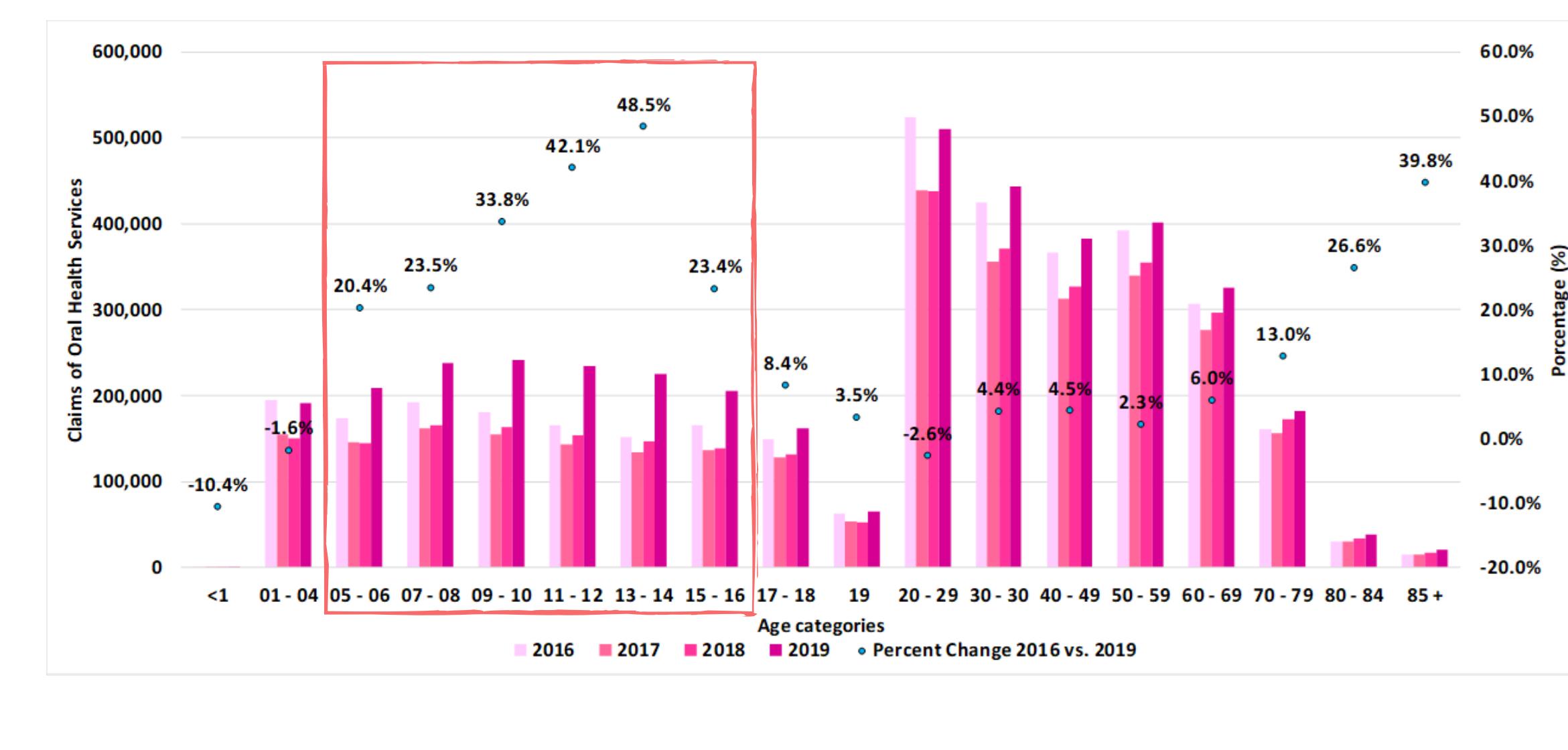


Figure 4. Number of oral health claims per month in beneficiaries of the PR Government Health Plan between 2016-2019

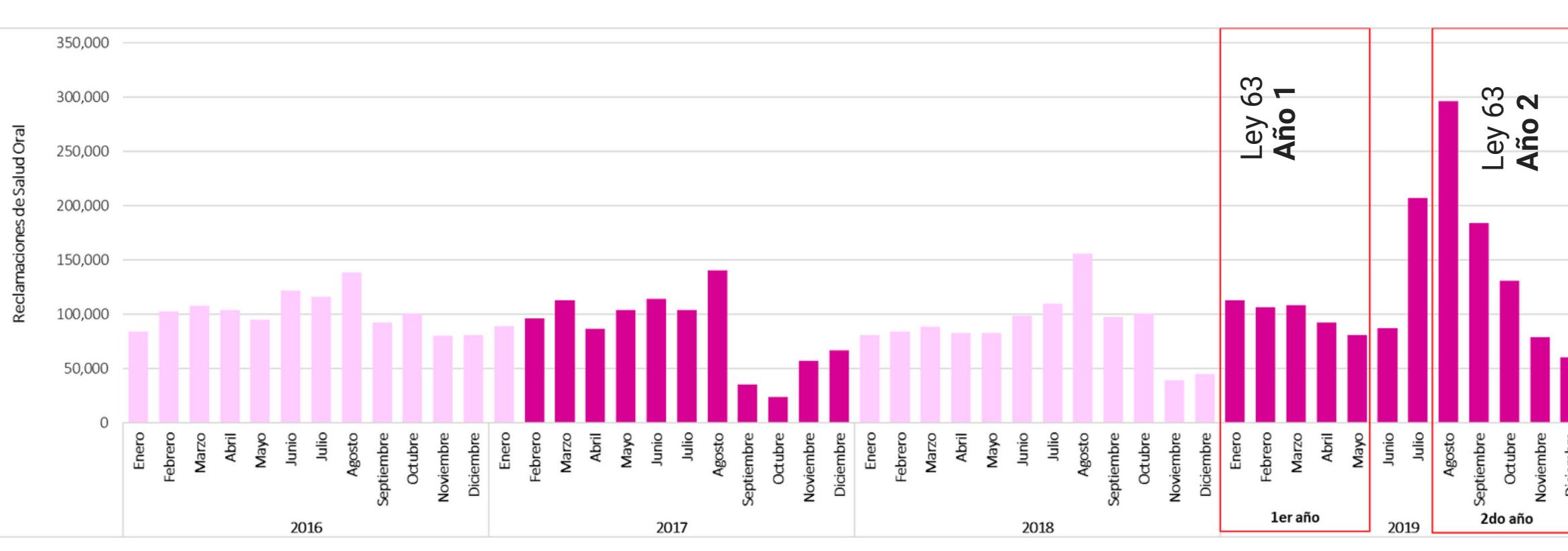


Figure 5. First four most frequent oral health claims in the beneficiaries (1-16 years) of the PR Government Health Plan in 2016 and 2019

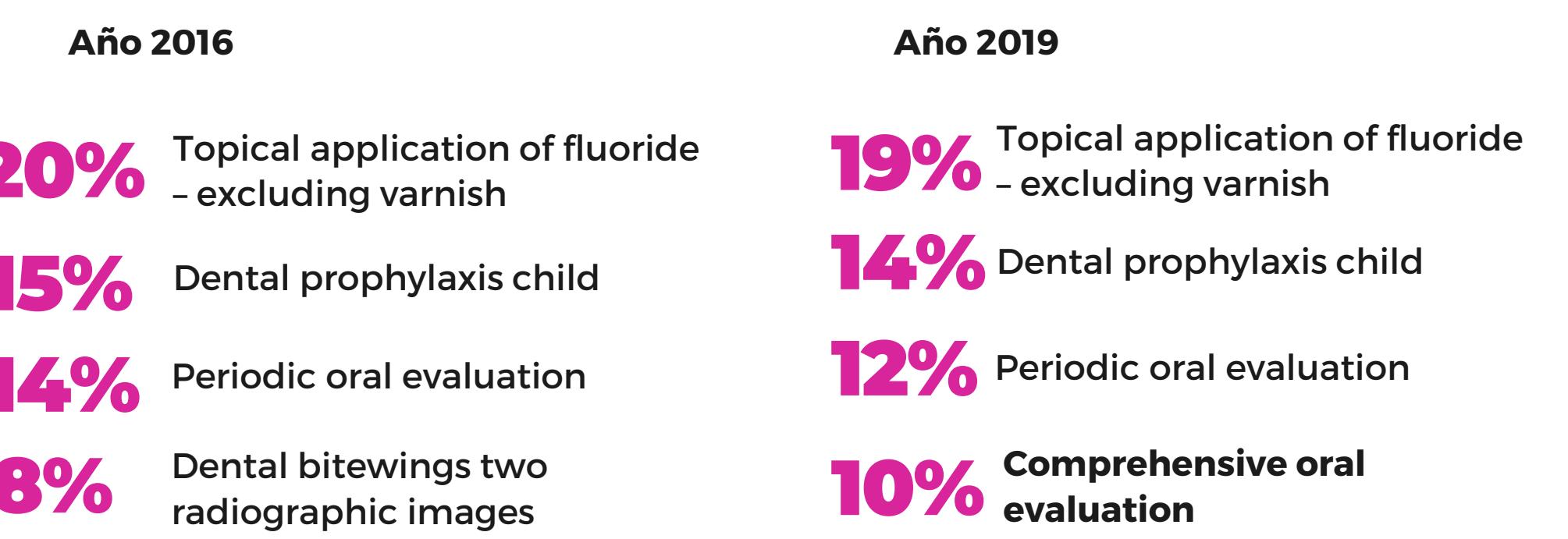


Figure 6. Oral health claims of beneficiaries (1-16 years) of the PR Government Health Plan by municipality of residence for 2019

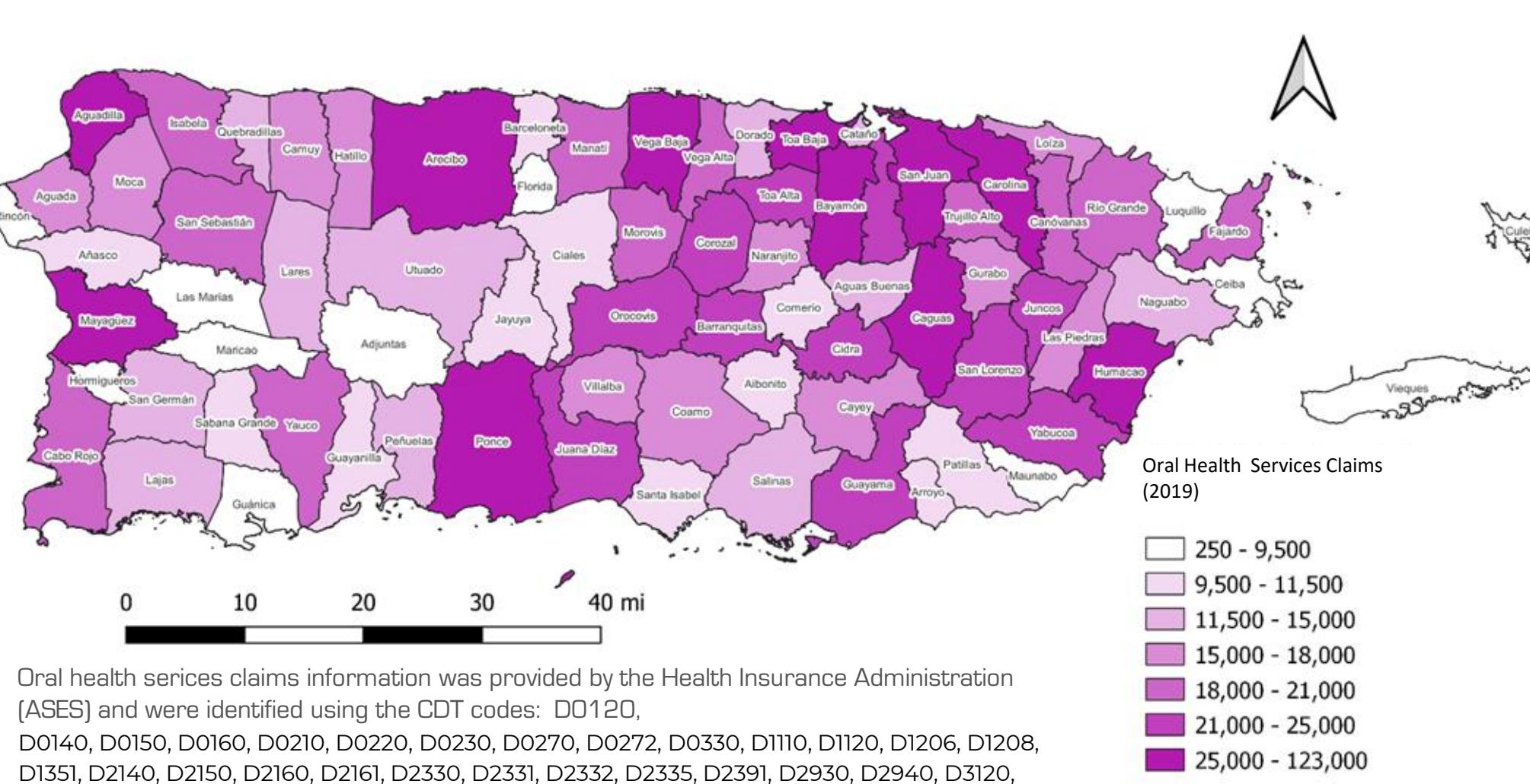
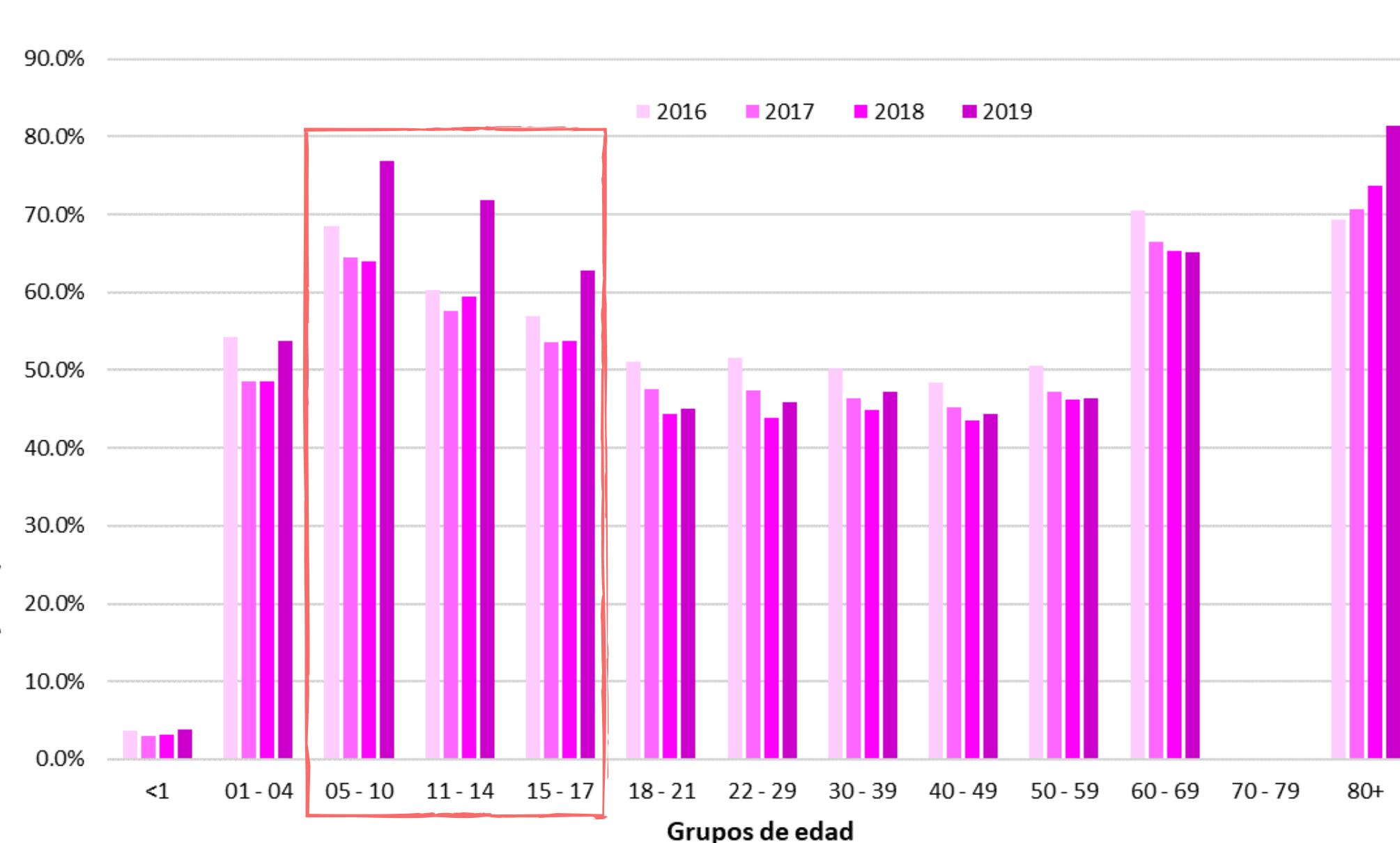


Figure 7. Average and standard deviation of oral health claims per beneficiary patient (1-16 years) of the PR Government Health Plan between 2016-2019

Claims by patient

Year	Average	Standard Deviation
Year 2016	5.6	±2.8
Year 2017	5.2	±2.8
Year 2018	5.6	±2.8
Year 2019	7.5	±4.3

Figure 8. Percentage of beneficiaries of the Government Health Plan who made at least one claim for oral health services in PR by age group between 2016-2019



Sample Selection Claims: Oral health claim services for the years 2016, 2017, 2018 and 2019 were provided by the PR Health Insurance Administration (ASES) and were identified using the following Procedure Codes and Dental Nomenclature: D0120, D0140, D0150, D0160, D0210, D0220, D0230, D0270, D0272, D0330, D110, D120, D126, D128, D129, D2150, D2160, D2161, D2230, D2331, D2332, D2335, D2391, D3120, D3220, D3221, D3310, D3320, D7140, D9110. According to the median number of lives insured by the Vital Plan in 2019, approximately 35.5% of the population in Puerto Rico was covered by public health insurance. The following variables were used to identify unique claims: ASES-provided unique identifier, last four digits of social security number, gender, date of service, and insurer expense per patient encounter. Any claim with a missing value in the selected single claim variables was removed from the analysis. All duplicate claims were also removed from the analysis. To identify patients with at least one oral health claim each year, the unique identifier provided by ASES was used.

## DISCUSSION

- The lowest percent of students in compliance with the law are observed in the first (23%) and third year (25%) of implementation, this could be attributed to the atypical initiation of the law due to hurricanes Irma and María and the impact of the Covid-19 Pandemic.
- In the fourth year of implementation, an increase in compliance is observed (42%; 57,642 students) when compared to previous years. In turn, an increase has been observed in the percentage of schools that made the compliance report, when compared to the first two years. (Figure 1)
- An increase of 320,727 claims for oral health services is observed in beneficiaries from 1 to 16 years of age of the Government Health Plan, when comparing 2019 with 2016. (Figure 2)
- The largest percentage change in oral health claims was in the school population impacted by the law (1-16 years). (Figure 3)
- During the first 2 years of implementation of the law, an increase was observed in the total number of claims made by beneficiaries aged 1-16. (Figure 4)
- The four preventive services with the highest complaints among the population aged 1-16 in 2019 were: "Topical application of fluoride – excluding varnish" (19%), "Dental prophylaxis child" (14%), "Periodic oral evaluation" (12%) and "Comprehensive oral evaluation" (10%). It should be noted that once the law comes into force, "Comprehensive oral evaluation" is positioned among the first four claims, which is not observed in previous years (Figure 5).
- The municipalities with the highest oral health claims in 2019 were: San Juan (122,935), Ponce (75,748), Bayamón (66,364), Caguas (59,198) and Carolina (59,120). (Figure 6)
- In the year that the implementation of the law officially begins (2019), there is an increase in the average number of oral health claims among beneficiaries from 1 to 16 years of age. Increasing the average of 5.6 claims per beneficiary in 2016, to 7.5 in 2019. (Figure 7)
- An increase in the percentage of beneficiaries aged 5-17 years with at least one oral health claim is observed, when comparing 2016 with 2019. (Figure 8)

## CONCLUSION

Taking into account the increase observed in the percentage of students who delivered the CEO and the total number of claims, a relationship can be established between the implementation of Law 63 of 2017 and the increase in claims for oral health services in the population of 1 to 16 years, thus proving its effectiveness. For this reason, it is important to continue monitoring and promoting compliance with this law, as well as developing new studies that help us establish trends. Similarly, Future studies should monitor and establish trends on the prevalence of caries at the population level, taking into account the school population covered by the law.

## REFERENCES

- Ruiz-Serrano, K., Felici-Giovanini, M., Díaz-García, R. (2021) *Oral Health Claims Report in Puerto Rico 2016-2019*. Chronic Disease Prevention & Control Program, Puerto Rico Department of Health, Integrated Services and Health Promotion, Puerto Rico Department of Health.
- Elias-Boneta AR, Herrero RH, Paster K, Toro Vizcarra CE, Paster WJ. The prevalence of pit and fissure sealants among twelve-year-olds living in Puerto Rico during 1997. *P R Health Sci J*. 2006 Jun;25(2):133-6.
- Ruiz-Serrano, K., Felici-Giovanini, M., Díaz-García, R. (2020) *Puerto Rico Compliance Oral Health Certificate Report (Year 1 & 2)*. Chronic Disease Prevention & Control Program, Health Promotion Division, Auxiliary Secretariat of Family Health, Integrated Services and Health Promotion, Puerto Rico Department of Health.
- Pérez-Pedromo R, Durán-Guzmán C, Rullán M, Soto Class L, Rodríguez-López A. (2008) *Oral Health Evaluation in children of third grade from Puerto Rico, 2005*. Department of Health of Puerto Rico

We thank the Puerto Rico Health Insurance Administration (ASES) for providing us with access to the data on oral health claims of the beneficiaries of the Government of Puerto Rico Health Plan.