Chronic dental diseases such as dental caries are among the most common chronic preventable diseases affecting children and adults in the United States; while many people enjoy easy access to dental treatment to treat conditions like dental caries, various socio-economic groups are underserved by dental care providers. Previous studies have identified underserved populations across the globe including racial and ethnic minorities, males, disabled persons, low income, poorly educated, rural populations, and uninsured individuals. This study aims to observe the patterns of specific service utilization among various underserved groups in the state of North Carolina. Data recorded for 534,983 procedures from 2011-2020 was extracted from the axiUm database containing records from ECU-owned clinics across the state of North Carolina. Patient health records were analyzed using IBM SPSS statistical analysis software. Patient records were analyzed by visit and cross-tabulation of dental service utilization by personal characteristics and payment method was performed. Disease burden and dental need were measured through DMFT score. Dental service utilization was broken down into specific categories by number of persons receiving specific treatment types. Method of payment was determined to be related to individual characteristics including location of service, age, race, and dental need. Method of payment plays a role in the determination of the dental service type utilized by an individual. Medicaid payers were more likely to receive restorative work, removable prosthetics, or oral surgery. Whereas, privately insured or self-paying individuals saw a greater variety of service options, and more attractive procedure options like endodontics, periodontics, fixed prosthodontics, implants, and more. Adults 65+ and patients with a demonstrated dental need (DMFT >0) demonstrated a higher likelihood to self-pay, indicating a lack of coverage for this population. In the interest of providing care to underserved populations in North Carolina, policy makers may wish to expand coverage for individuals with a demonstrated need as well as adults 65+, who currently lack insurance options. Further work will analyze these procedures at the patient level, allowing for a proper cross-analysis of personal attributes like race, gender, age, location, and other factors.

Methods

Figure 2: Demonstrated dental disease burden at each visit in axiUm database

Only 64.7% of Americans reported having been to a dentist in a 2012 survey. Marginalized socio-economic groups make up a disproportionate number of the Americans who report having no visits to a dental professional in the last year. Marginalized socio-economic groups make up a disproportionate number of the Americans who report having no visits to a dental professional in the last year.

Results

Discussion

• Likelihood of utilization of specific services is determined by the payment method used.
• Visits that displayed a greater dental need (DMFT >0) more often were paid by self-pay or private insurance, type of Medicaid.
• Visits from near-elderly (65-74) and elderly (75+) adults show an increase in self-pay payment with a decrease in Medicaid usage compared to younger adults.

Conclusions

• State or Federal policy decisions ought to expand coverage for underserved groups as:
  • Adults 65+ experience a lack of coverage options for necessary dental treatment.
  • Visits by underserved persons with demonstrated need (DMFT >0) were not adequately covered by Medicaid.
  • Further analysis of individual patients in the axiUm database will be performed
  • Allows for proper crosstabulations of dental utilization by race, gender, age, and other variables
  • Can identify differences in dental need by personal characteristics or location.

Acknowledgements

This project was made possible by funding from East Carolina University School of Dental Medicine through the Summer Scholars Research Program. Special thanks to Dr. Al-Dajani and Dr. Moss for their contributions and guidance throughout this project.

References