

Effect of Medicaid Status on Up-to-Date Vaccination Rates Among Two-Year-Old Children in Georgia, Georgia Immunization Study, 2015

BACKGROUND

The annual Georgia Immunization Study (GIS) employs a retrospective cohort design to determine the up-to-date (UTD) immunization rate of two-year-old children in Georgia. Previous GIS results have shown lower vaccination rates for vaccines typically administered in the second year of life.

Infants are eligible for Newborn Medicaid if born to a mother eligible for and receiving Medicaid under any Medicaid program. These children are eligible for up to 13 months beginning with the month of birth and continuing through the month in which the child reaches age one¹. After this period, recipients must reapply for Medicaid and may qualify based on age, family size, and income.

We sought to determine whether a discontinuation of Medicaid coverage after the first year of life contributed to lower immunization rates in the second year in Georgia during 2015.

METHODS

A stratified random sample of 2,002 Georgia children born in January 2013 was drawn from electronic birth records. Immunization history and Medicaid status were obtained from the Georgia Registry of Immunization Transactions and Services (GRITS). Parents and medical providers of children inadequately immunized according to the Advisory Committee on Immunization Practices' (ACIP) immunization schedule were contacted for additional information regarding the lack of vaccination(s). UTD immunization rates were compared among participants based on Medicaid status (Medicaid both years, first year only, and never on Medicaid). The relationship between Medicaid status and specific immunizations was also explored. Odds ratios and confidence intervals were calculated using R, version 3.3.3, package "epitools".

Fabio R. Machado, MPH; Jessica Tuttle, MD; Georgia Department of Public Health

RESULTS

Figure 1 shows when children completed the 4:3:1:3:3:1:4 ACIP vaccination schedule and individual vaccine series by Medicaid status.

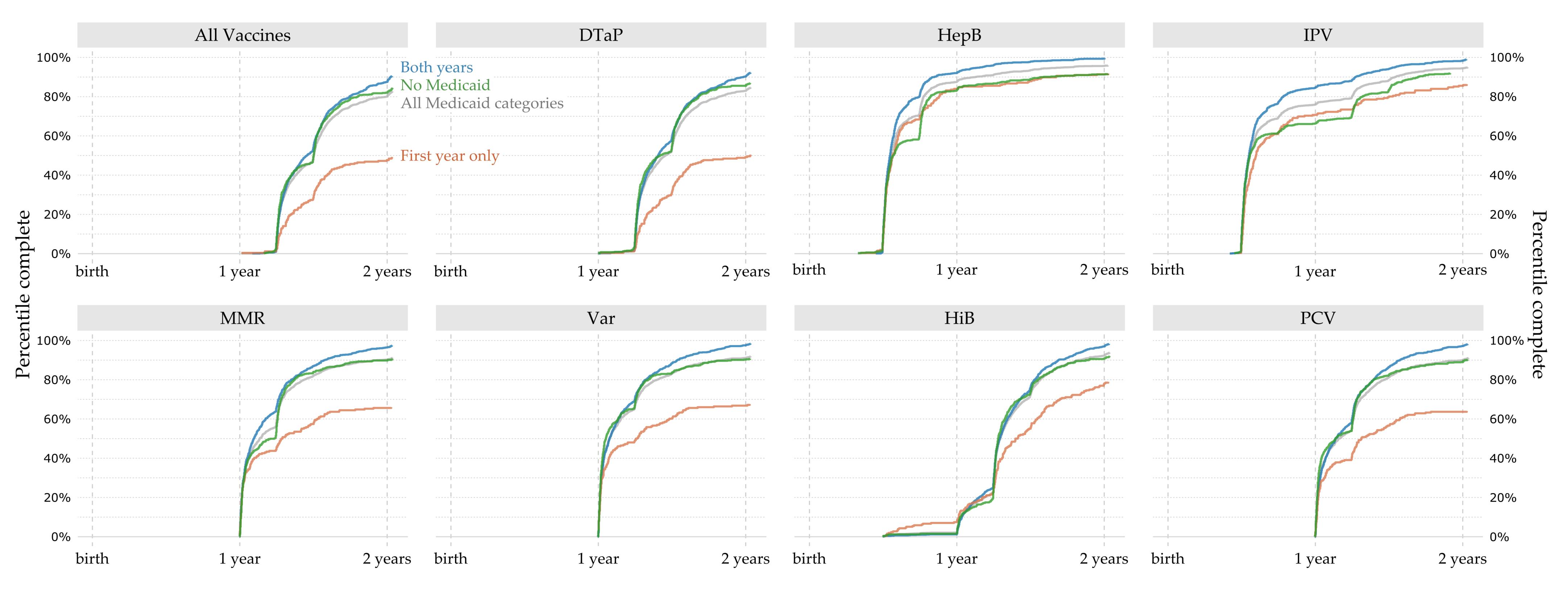


Figure 1: Percentage of children that completed vaccination series by medicaid status, Georgia, 2015

Tables 1 and 2 compare the up to date vaccination rates between Medicaid groups. The reference group for the odds ratios were those that had Medicaid the 1st year but not 2nd year.

Table 1: Up to date immunization rates by one year of age, Georgia, 2015

| Vaccine | Medicaid Status | Percent UTD (n) | Odds Ratio | p value si | ig |
|---|--------------------------|--------------------|-------------------|-------------------|----|
| All vaccines | First year only, n = 256 | 0.4% (1) | Reference | Reference | |
| | Both years, n = 1013 | 0.2% (2) | 0.47 (0.04-14.9) | 0.597 | |
| | No Medicaid, n = 657 | 0.8% (5) | 1.76 (0.27-46.7) | 0.601 | |
| Diptheria, Tetanus and acellular Pertusis vaccine | First year only, n = 256 | 0.4% (1) | Reference | Reference | |
| | Both years, n = 1013 | 0.2% (2) | 0.47 (0.04-14.9) | 0.597 | |
| (DTaP) | No Medicaid, n = 657 | 0.8% (5) | 1.76 (0.27-46.7) | 0.601 | |
| Hepatitis B vaccine (HepB) | First year only, n = 256 | 85.2% (218) | Reference | Reference | |
| | Both years, n = 1013 | 93.6% (948) | 2.54 (1.65-3.88) | p < 0.0001 | * |
| | No Medicaid, n = 657 | 85.2% (560) | 1.01 (0.67-1.50) | 0.967 | |
| Inactivated Polio Vaccine (IPV) | First year only, n = 256 | 71.1% (182) | Reference | Reference | |
| | Both years, n = 1013 | 85.8% (869) | 2.45 (1.77-3.38) | p < 0.0001 | * |
| | No Medicaid, n = 657 | 67.9% (446) | 0.86 (0.63-1.18) | 0.349 | |
| Measles, Mumps and Rubella vaccine (MMR) | First year only, n = 256 | 32.8% (84) | Reference | Reference | |
| | Both years, n = 1013 | 36.8% (373) | 1.19 (0.90-1.6) | 0.233 | |
| | No Medicaid, n = 657 | 34.6% (227) | 1.08 (0.80-1.47) | 0.622 | |
| Varicella vaccine (Var) | First year only, n = 256 | 34.4% (88) | Reference | Reference | |
| | Both years, n = 1013 | 40.6% (411) | 1.30 (0.98-1.74) | 0.069 | |
| | No Medicaid, n = 657 | 46.4% (305) | 1.65 (1.23-2.24) | p < 0.001 | * |
| Haemophilus influenzae type B vaccine (Hib) | First year only, n = 256 | 12.9% (33) | Reference | Reference | |
| | Both years, n = 1013 | 10.9% (110) | 0.82 (0.55-1.26) | 0.36 | |
| | No Medicaid, n = 657 | 11.9% (78) | 0.91 (0.59-1.42) | 0.667 | |
| Pneumococcal conjugate vaccine (PCV) | First year only, n = 256 | 28.5% (73) | Reference | Reference | |
| | Both years, n = 1013 | 32.6% (330) | 1.21 (0.90-1.64) | 0.213 | |
| | No Medicaid, n = 657 | 39.4% (259) | 1.63 (1.19-2.24) | p < 0.01 | * |

Contact: Fabio.Machado@dph.ga.gov

| Vaccine | Medicaid Status | Percent UTD (n) | Odds Ratio | p value | sig |
|--|--------------------------|-----------------|-------------------|------------|-----|
| All vaccines | First year only, n = 256 | 49.2% (126) | Reference | Reference | |
| | Both years, n = 1013 | 90.4% (916) | 9.71 (7.05-13.4) | p < 0.0001 | * |
| | No Medicaid, n = 657 | 84.3% (554) | 5.53 (4.01-7.66) | p < 0.0001 | * |
| Diptheria, Tetanus and acellular Pertusis vaccine (DTaP) | First year only, n = 256 | 50.4% (129) | Reference | Reference | |
| | Both years, n = 1013 | 92.2% (934) | 11.6 (8.31-16.3) | p < 0.0001 | * |
| | No Medicaid, n = 657 | 86.8% (570) | 6.43 (4.62-9) | p < 0.0001 | * |
| Hepatitis B vaccine (HepB) | First year only, n = 256 | 89.8% (230) | Reference | Reference | |
| | Both years, n = 1013 | 99.4% (1007) | 18.5 (8.01-51) | p < 0.0001 | * |
| | No Medicaid, n = 657 | 91.5% (601) | 1.22 (0.734-1.97) | 0.438 | |
| Inactivated Polio Vaccine (IPV) | First year only, n = 256 | 81.6% (209) | Reference | Reference | |
| | Both years, n = 1013 | 98.6% (999) | 15.9 (8.79-30.5) | p < 0.0001 | * |
| | No Medicaid, n = 657 | 91.3% (600) | 2.37 (1.55-3.59) | p < 0.0001 | * |
| Measles, Mumps and Rubella vaccine (MMR) | First year only, n = 256 | 66.0% (169) | Reference | Reference | |
| | Both years, n = 1013 | 97.3% (986) | 18.7 (11.9-30.1) | p < 0.0001 | * |
| | No Medicaid, n = 657 | 90.6% (595) | 4.93 (3.42-7.15) | p < 0.0001 | * |
| Varicella vaccine (Var) | First year only, n = 256 | 67.6% (173) | Reference | Reference | |
| | Both years, n = 1013 | 98.4% (997) | 29.5 (17.3-53.6) | p < 0.0001 | * |
| | No Medicaid, n = 657 | 90.6% (595) | 4.59 (3.18-6.67) | p < 0.0001 | * |
| Haemophilus influenzae type B vaccine (Hib) | First year only, n = 256 | 62.1% (159) | Reference | Reference | |
| | Both years, n = 1013 | 96.9% (982) | 19.3 (12.5-29.9) | p < 0.0001 | * |
| | No Medicaid, n = 657 | 90.6% (595) | 5.85 (4.07-8.42) | p < 0.0001 | * |
| Pneumococcal conjugate vaccine (PCV) | First year only, n = 256 | 63.7% (163) | Reference | Reference | |
| | Both years, n = 1013 | 97.9% (992) | 26.7 (16.5-45.2) | p < 0.0001 | * |
| | No Medicaid, n = 657 | 90.1% (592) | 5.18 (3.62-7.46) | p < 0.0001 | * |

DISCUSSION

A discontinuation of Medicaid coverage after the first year of life was associated with lower UTD immunization rates for all vaccines, except HepB. The odds of being UTD at two-years-old with all vaccinations (according to the ACIP 4:3:1:3:3:1:4 schedule) was 9.7x higher for children who were on Medicaid both years and 5.5x higher for children who never had Medicaid compared to those that only had Medicaid the first year. Each vaccine individually demonstrates a similar relationship between Medicaid status and completion rates at two years of age (Table 2). This relationship is also apparent (although less strong) for vaccines that should be complete before one year of age (HepB and IPV), suggesting that children who lose Medicaid coverage after the first year of life may have other factors that affect their UTD rates (Table 1).

Further study needs to be conducted to identify the risk factors associated with a discontinuation of Medicaid coverage after the first year of life. This would provide an opportunity to intervene before the end of the infant year to increase vaccination rates.

LIMITATIONS

Medicaid status is a proxy measure of Medicaid coverage gathered from data entered into GRITS by various users, not from Medicaid's enrollment database, which was unavailable at the time of data collection.

REFERENCES

Medicaid FAQs. Georgia Department of Community Health. <u>www.dch.georgia.gov/medicaid-faqs</u>
Georgia Immunization Study 2015. Georgia Department of Public Health. <u>www.dph.georgia.gov/immunization-publications</u>

ACKNOWLEDGEMENTS

We would like to thank all 18 Public Health District Immunization Coordinators for
their time and commitment to the study, and Dr. Cherie Drenzek, DVM, MS, State
Epidemiologist and Sheila Lovett, Immunization Program Director of the *Georgia Department of Public Health,* for their support and guidance.