

The [Advisory Committee on Immunization Practices \(ACIP\)](#) recommends certain vaccinations before or during pregnancy to protect pregnant people and their children from serious diseases. The [Pregnancy Risk Assessment Monitoring System \(PRAMS\)](#), an ongoing survey of new parents on maternal health and birth outcomes, asks questions on flu and Tdap vaccinations before and during pregnancy. For this report, PRAMS data from 2016 - 2022 were used to assess factors associated with flu and Tdap vaccinations among pregnant people in Vermont.

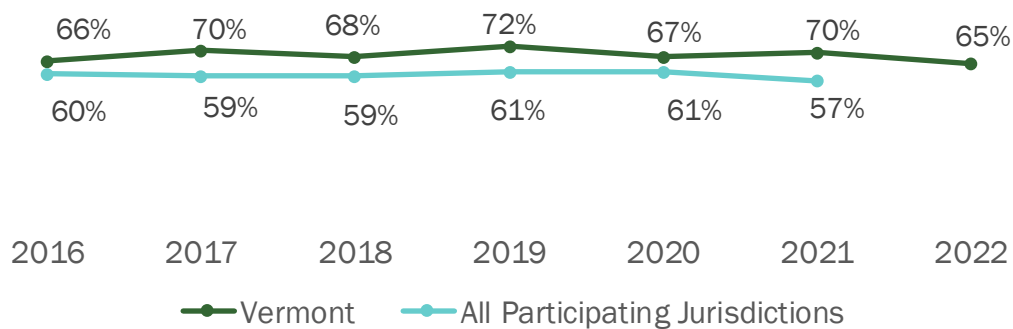
### Vaccination Rates Over Time

From 2016 to 2022, 68% of pregnant people in Vermont received a flu shot in the 12 months prior to birth. Flu vaccination rates in Vermont are higher than the national rates.<sup>1</sup> There were no significant changes in vaccination rate between consecutive years.

#### KEY POINTS

- Flu and Tdap vaccination rates among pregnant people in Vermont are consistently higher than national averages.
- Pregnant people older than 35, with a higher income, higher education, private insurance, and not experiencing discrimination from a healthcare provider have higher vaccination rates.
- Smoking during pregnancy is associated with lower flu and Tdap vaccination rates.
- Receiving information from a healthcare provider on vaccines prior to or during pregnancy is associated with higher vaccination rates.

### Influenza Vaccination Rates Before or During Pregnancy by Data Year



Data Source: [Centers for Disease Control](#), VT PRAMS

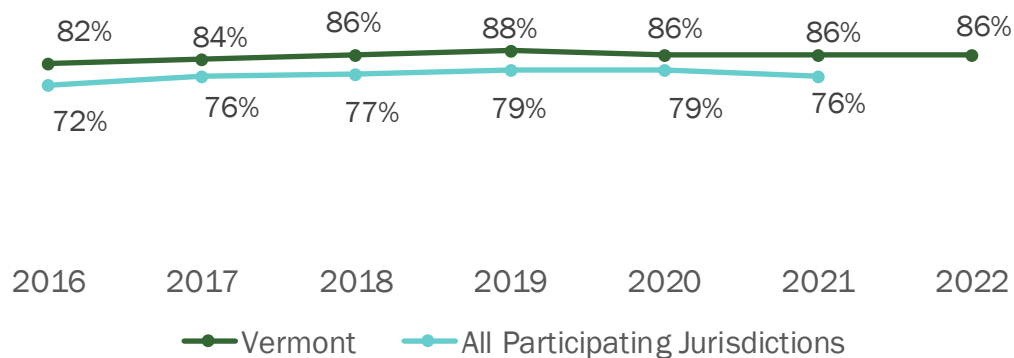
<sup>1</sup> As of October 2024, national comparison data are available through 2021. These data come from [all participating PRAMS sites](#).

# Vaccination Rates Among Pregnant People

From 2016 to 2022, 86% of pregnant people in Vermont received a Tdap vaccination during pregnancy. For all years with comparable data, Tdap vaccination rates in Vermont are higher than the national rates. There were no significant changes in vaccination rates between consecutive years.

Rates in the chart below have been adjusted to remain consistent with CDC reporting. The CDC removes those who are unsure on their Tdap vaccine status from the denominator. In VT PRAMS reports, these individuals are included in the denominator and considered to not be vaccinated.

## Tdap Vaccination Rates During Pregnancy by Data Year



Data Source: [Centers for Disease Control](https://www.cdc.gov/), VT PRAMS

## Sociodemographic Groups

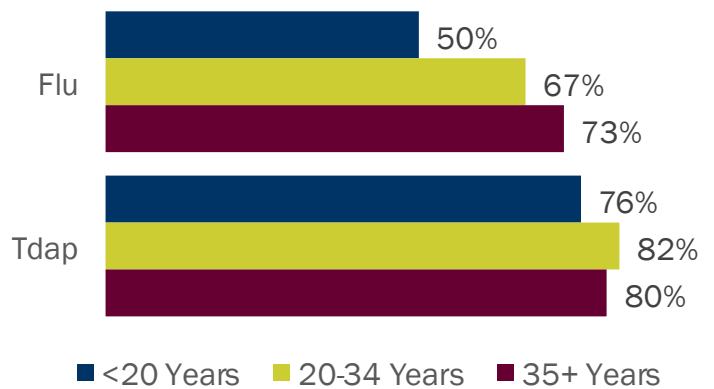
### Age

All age groups have significantly different flu vaccination rates in the 12 months prior to delivery.

- The rate of flu vaccination before or during pregnancy is significantly **higher** for those 35 years of age or older (73%) compared to those aged 20 to 34 years (67%).
- Those aged 20 to 34 years have a **higher** flu vaccination rate than those less than 20 years of age (50%).

Rates of Tdap vaccination do not differ based on age of birthing parent.

## Vaccination Rates by Maternal Age Group

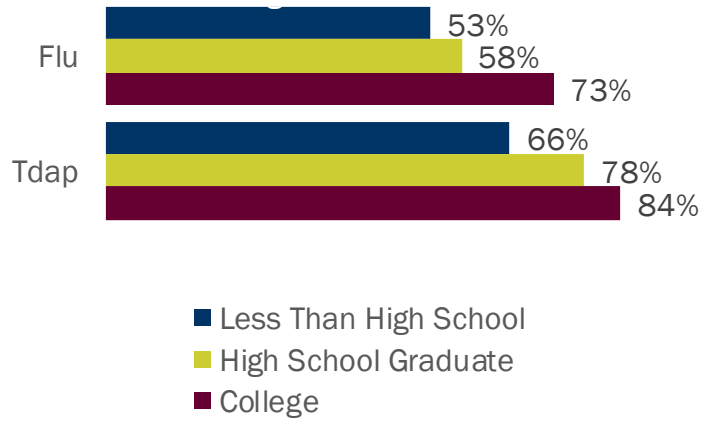


## Education

Birthing parent's education level is sometimes associated with vaccination before delivery.

- Pregnant people with at least some college education have **higher** flu vaccination rates (73%) than those who are high school graduates (58%) and those who did not finish high school (53%).
- Those with at least some college education have **higher** Tdap vaccination rates (84%) than high school graduates (78%).
- High school graduates have significantly **higher** Tdap vaccination rates than those who did not finish high school (72%).

## Vaccination Rates by Maternal Education Level

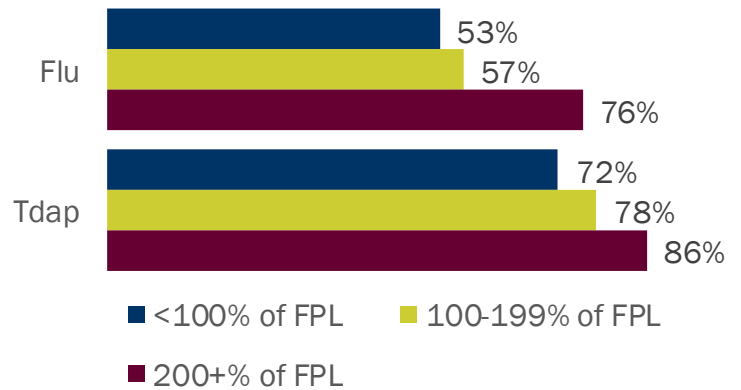


## Income

Household income can be associated with getting vaccinated before or during pregnancy.

- Those with the highest household incomes have a statistically **higher** flu vaccination rate (76%) compared to those with lower household incomes (53% and 57%).
- Birthing parents with the highest household incomes have a **higher** Tdap vaccination rate (86%) than those with an income of 100-199% FPL (78%) or a household income of less than 100% FPL (72%).

## Vaccination Rates by Household Income

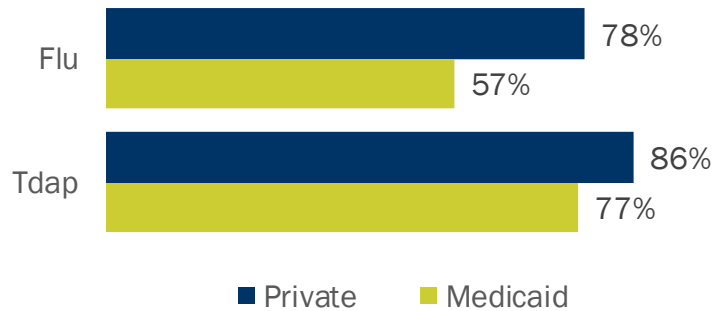


## Insurance

Vaccination rates for both flu and Tdap differ significantly between insurance types used for delivery:

- Birthing people with private insurance have a **higher** flu (78%) vaccination rate than those with Medicaid.
- Birthing people with private insurance have a **higher** Tdap (86%) vaccination rate than those with Medicaid (77%).

## Vaccination Rates by Insurance Type

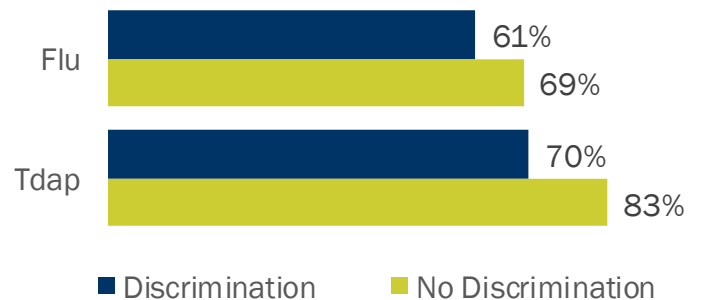


## Health Care Provider

Ten percent of pregnant people in Vermont report experiencing discrimination from a health care provider over the course of their perinatal period.

Pregnant people who do not report experiencing discrimination from a healthcare provider have higher vaccination rates than those who do for both flu (69% vs. 61%) and Tdap (70% vs. 83%) vaccines.

## Vaccination Rates by Discrimination From Health Care Provider

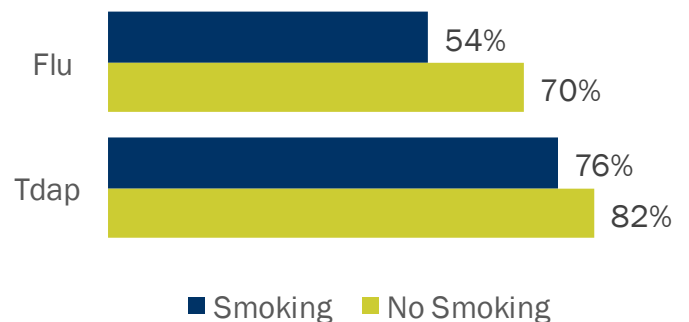


## Risk Factors: Smoking, Hypertension, and Diabetes

### Smoking

Those who smoke during pregnancy have statistically lower flu vaccination rates (54%) compared to those who do not smoke during pregnancy (70%). Those who smoke during pregnancy have statistically lower Tdap vaccination rates (76%) than those who do not (82%).

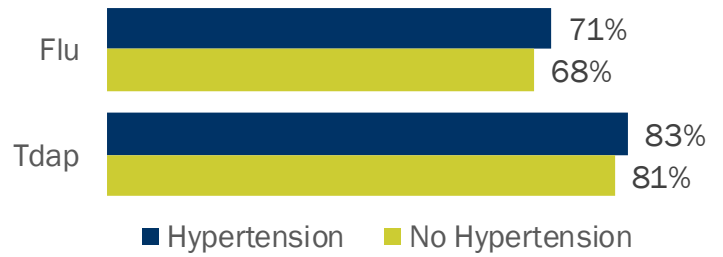
## Vaccination Rates by Smoking Status During Pregnancy



## Hypertension

There are no significant differences in vaccination rates for either flu or Tdap between those with and without hypertension during pregnancy.

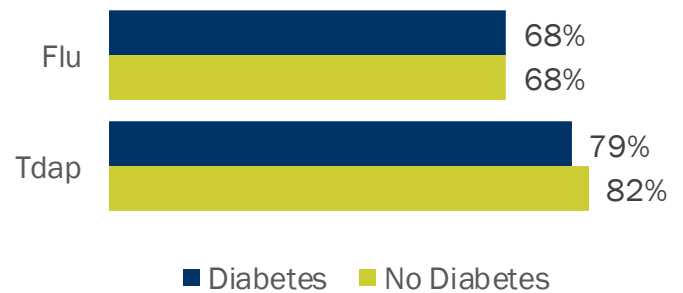
### Vaccination Rates by Hypertension



## Diabetes

There are no significant differences in vaccination rates between those with and without diabetes during pregnancy.

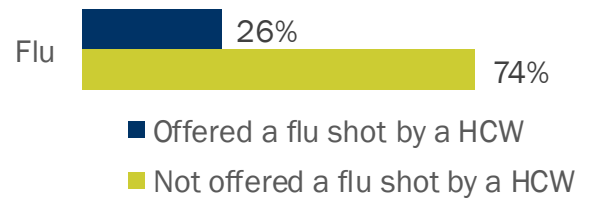
### Vaccination Rates by Diabetes



## Guidance About Immunizations

Eighty-nine percent of birthing parents are offered a flu shot, or told to get one, by a health care worker (HCW) before or during their pregnancy. Those who are offered a flu shot have a significantly **higher** rate of flu vaccination before or during pregnancy (74%) compared to those who are not (26%).

### Flu Vaccination Rates by Offered a Flu Shot by a HCW



Among those who discussed their pregnancy with a healthcare provider before getting pregnant, 55% discussed getting their vaccinations up to date.

Those who discussed vaccinations with a healthcare provider prior to pregnancy had a significantly **higher** flu vaccination rate (81%) than those who did not (73%). This group also had a **higher** Tdap vaccination rate (89% versus 84%).

### Vaccination Rates by Discussion of Vaccination Prior to Pregnancy



## Data Notes

More information about PRAMS in Vermont can be found [here](#). More information about CDC PRAMS methodology can be found [here](#).

Individuals are considered to have hypertension (high blood pressure) if they

- A. Had hypertension in the three months prior to pregnancy **or**
- B. Developed it during pregnancy (pre-eclampsia or eclampsia).

Individuals are considered to have diabetes if they

- A. Had Type 1 or Type 2 diabetes prior to pregnancy **or**
- B. Developed diabetes during pregnancy (gestational diabetes).

The Vermont Department of Health recognizes the many social, economic and environmental inequities which drive the data in this report. We are working to incorporate data reflective of these lived experiences among all Vermonters.

**For more information:** [AHS.VDHVaccinationData@vermont.gov](mailto:AHS.VDHVaccinationData@vermont.gov)

## Vermont PRAMS (2016-2022)

### Sociodemographic groups

Maternal age group	
<20 Years	3%
20-34 Years	75%
35+ Years	22%

Maternal education level	
Less Than High School	7%
High School Graduate	24%
College	70%

Household income (as a percentage of the Federal Poverty Level (FPL))	
<100% of FPL	17%
100-199% of FPL	21%
200+% of FPL	63%

Delivery payment source	
Private	58%
Medicaid	42%

Experienced discrimination from a health care provider	
Discrimination	10%
No Discrimination	90%

### Risk factors

Smoking status during pregnancy	
Smoking	13%
No Smoking	87%

People affected by hypertension during their pregnancy	
Hypertension	16%
No Hypertension	84%

People affected by diabetes during their pregnancy	
Diabetes	11%
No Diabetes	89%