

Michigan Department of Health and Human Services (MDHHS)
Division of Immunization
COVID-19 Impact Report
January 13, 2022

This report was created by the MDHHS Division of Immunization and University of Michigan Child Health Evaluation and Research Center (CHEAR team) to monitor the impact of the COVID-19 pandemic on non-COVID immunizations, as reported to the Michigan Care Improvement Registry (MCIR).

MDHHS Division of Immunization

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Key points:

- As of October 31st, 2021, MCIR data show a **decline in vaccination coverage for children under 2 years at milestone ages** over the last 2 years, with most age groups seeing a slight increase since July 2021. In particular, the impact of the COVID-19 pandemic can be seen in the decreased coverage rates for Michigan children since November 2019 (**Figure 1; Table 1**), which could be due to health care worker shortages, disruptions due to increased COVID-19 case counts or because the parents are hesitant to visit a provider due to the continued unavailability of an approved vaccine against COVID-19 for children 2 years of age and younger.
 - **Please note:** Due to issues with hepatitis B birth dose reporting, the 1-month birth cohort was removed as a milestone age cohort and the assessment of the 3-month age cohort may be impacted.
 - Disparities in coverage by Medicaid status continue to increase, with the greatest disparity among 24-month-olds: coverage is 17.2 percentage points lower for Medicaid-enrolled compared to non-Medicaid-enrolled children, according to the current October 31st assessment (**Table 2**).
- Statewide coverage for children 19 through 35 months with the 43133142 series (4 DTaP, 3 Polio, 1 MMR, 3 Hib, 3 HepB, 1 Varicella, 4 PCV, 2 HepA; **Figure 2**) **fell by 5 percentage points** during the initial months of the pandemic from 58.2% in Jan 2020 to 53.6% in July 2020. After that, coverage rates rebounded somewhat steadily, with a small spike in December 2020 (56.8%). The coverage rate in October 2021 (55.7%) is slightly higher than that reported in July (55%) but remains **about 2.5 percentage points below** pre-pandemic levels. A similar pattern holds for the same series without HepA (4313314; **Figure 3**), which fell from the pre-pandemic level of 73.6% in Jan 2020 to 69.6% in October 2021.
- Statewide coverage for adolescents 13 through 17 years of age for the 1323213 series (1 Tdap, 3 Polio, 2 MMR, 3 HepB, 2 Varicella, 1 MenACWY, 2 or 3 HPV; **Figure 4**) **fell by less than 1 percentage point** from 43.2% in Jan 2020 just before the pandemic to 42.6% in July 2021. However, the coverage increased slightly to 42.9% as of October 31, 2021. Coverage for the same series without HPV (**Figure 5**) **fell by almost 4 percentage points** from 77% in Jan 2020 to 73.3% in October 2021.
- The pandemic has **exacerbated an existing disparity** in 4313314 series coverage between children aged 19-35 months enrolled in Medicaid and their peers who are not enrolled in Medicaid (**Figure 6**). Medicaid enrollees have experienced a 6.8 percentage point loss in coverage, registering a 10-year low in coverage (64.7%) as of October 31, 2021. In contrast, coverage rates for children not enrolled in Medicaid have **rebounded to within 0.2 percentage points** of their pre-pandemic rate of 75.1% (Jan 2020).
- 2021 Public vaccine dose orders increased as compared to 2020 and are gradually increasing above pre-pandemic 2018-19 orders within the past quarter (**see figure in**

section 3). Note: The last data point for week 46 has incomplete data and should not be considered.

- Comparing the total number of doses administered thus far in 2021 to the 2018-19 average for the same months (Jan-Sept), we find that **the overall number of non-COVID doses administered each month still lags pre-pandemic levels**. [Note: Jan-Sept 2021 totals were not compared to Jan-Sept 2020].
 - After reaching its minimum in April 2020, monthly administrations to persons aged 0-105 began to rebound in 2021 although they still lag the 2018-19 average. The greatest differences were in April (26.7% fewer administrations compared to April 2018-19 avg) and May (26.3% fewer administrations). Nevertheless, this is a substantial improvement from April and May of 2020, when administrations were down by 63.2% and 43.7%, respectively.
 - As of September 2021, monthly administrations are still down, but by lesser amounts:
 - ✓ 14.7% fewer administrations across the lifespan (0-105 years)
 - ✓ 8.6% fewer administrations in children (0-8 years)
 - ✓ 14.6% fewer administrations in adolescents (9-18 years)
 - ✓ 23.1% fewer administrations in adults (19-105 years)
- Trends in dose administration vary by eligibility type
 - While the number of VFC and Medicaid-funded doses has almost recovered to 2018-19 levels, MI-AVP-funded doses declined sharply in April 2020 and remained flat ever since. Since week 38 in 2021, privately funded doses have fallen substantially below both 2018-19 and 2020 levels (see figures in section 4).
- Trends in dose administration by vaccine type and age group (see figures in Section 5):
 - For children, the vaccines of most concern are **IPV (Polio) and Hib, which have consistently failed to rebound** to pre-pandemic levels throughout 2021. Most other child vaccines have seen a consistent increase since 2020, even if they do not quite reach 2018-19 levels.
 - For adolescents, **HepA administrations have failed to rebound all year**.
 - For adults, **HepA, HepB, MenB, PCV13, and PPSV23 have all failed to rebound** to the 2018-19 average. [Note: This is also true for MMR, but the 2018-19 baseline is somewhat inflated by a spike during weeks 10-30 of 2019 in response to a measles outbreak].
- Dose administration patterns vary by MCIR facility type (see figures in Section 6):
 - **Pediatric and family practices are now reporting nearly the same number** of (non-flu) vaccines administered to children and adolescents that they reported on average in 2018-19.

- **Child and adolescent vaccine administrations at LHDs have increased since 2020**, and adult administrations are now similar to 2020 levels.
- **Pharmacies** have been an important site for adult COVID vaccinations, but they also **greatly increased the volume of other non-flu vaccines** administered in 2020 (weeks 35-52) and early 2021 (weeks 1-5). However, pharmacy administration in the past quarter has decreased compared to both 2020 and the 2018-19 average.
- Most counties reported a decrease in doses administered across the lifespan in 2021 compared to the 2018-19 average, with the lowest quartile of counties reporting declines of 21.2- 46.5% (**see figure in section 7**). **Note:** the map includes non-influenza, non-COVID vaccine administrations.
- The Division of Immunization created a new website to support immunization providers in the context of COVID-19: www.Michigan.gov/VaccinesDuringCOVID.

Report Sections:

1. Child Coverage by Milestone Vaccination Ages

- Vaccination status for one-month cohorts of children at ages 3, 5, 7, 16, 19 and 24 months are assessed; ages correspond to the end of an Advisory Committee on Immunization Practices (ACIP) recommendation period for one or more vaccines. Current data are compared to one-month cohorts as of different points in time throughout 2018-2020. Current coverage is also summarized by MCIR region and Medicaid status.
- Spreadsheets of county level data are available, please contact MCIR epidemiologist Sukhesh Sudan at sudans@michigan.gov.

2. Coverage Data by County, Region, and Statewide

- Series-level coverage estimates for children and adolescents compiled using MCIR profile reports.
- Coverage estimates for Medicaid-enrolled children also compiled using MCIR profile reports.
- Spreadsheets of county level data are available, please contact MCIR Business Analyst Abhinav Nalla at NallaA@michigan.gov.
- Historical county level spreadsheets are also available on MCIR.org (<https://www.mcir.org/providers/local-health-departments-lhd/county-data/>).

3. Public Dose Orders

- The Vaccine for Children (VFC) program is a federally funded program that provides vaccines at no cost to eligible children who might not otherwise be

vaccinated because of inability to pay. Michigan providers have participated in VFC since 1995.

- The Michigan Adult Vaccine Program (MI-AVP) provides public funds for select vaccines for adults, aged 19 years and older, who are uninsured or under-insured (adult has insurance, but it does not cover any part of the vaccination), who have a need for specific vaccines, or who have specific risk factors.
 - The MI-AVP program is available to local health departments, federally qualified health centers, migrant health centers and tribal health centers.
- Public orders include VFC and MI-AVP doses.

4. Doses by Eligibility

- VFC, MI-AVP, Medicaid and Private doses are classified based on eligibility codes reported to the MCIR. Only public doses are required to be submitted to the MCIR with an eligibility code.
- Dose eligibility may be incorrectly or not entered.
- Doses reported without or with an unknown eligibility code are not included in these figures.
- Spreadsheets of county level administration data are available, please contact MCIR epidemiologist Hannah Forsythe at ForsytheH@michigan.gov.

5. Doses by Vaccine Type by Age Group

- The ACIP recommends immunization across the lifespan. This section of the report is separated by child (0 through 8 years of age), adolescent (9 through 18 years) and adults (19 years and older). This report includes the most common non-influenza vaccine types (excludes non-vaccine products such as tuberculin skin tests and immunoglobulins) by age at administration reported to the MCIR.
- Of note, the State of Michigan has been experiencing a hepatitis A outbreak since August 2016 and experienced a measles outbreak in early 2019. As a result, there have been peaks of administration of vaccines containing hepatitis A and measles antigens across the lifespan. Additionally, a new herpes zoster vaccine was recommended in late 2017 and adult uptake has been considerable in 2018 and 2019 across Michigan.
- Spreadsheets of county level administration data are available, please contact MCIR epidemiologist Hannah Forsythe at ForsytheH@michigan.gov.

6. Doses by MCIR Facility Type by Age Group

- Each facility registered in the MCIR is assigned one of 54 facility types (i.e. family practice, local health department, pharmacy, etc.).
- Non-influenza, non-COVID doses administered by select facility types for each age group.
- Spreadsheets of county level administration data are available, please contact MCIR epidemiologist Hannah Forsythe at ForsytheH@michigan.gov.

7. Percent Change in Non-Influenza Doses by County

- County level map depicting the percent change in non-influenza doses administered and reported to the MCIR across the lifespan in January through September 2021 to the average for the same time period in 2018-19 (based on facility county).

Additional Information on Data in the Report:

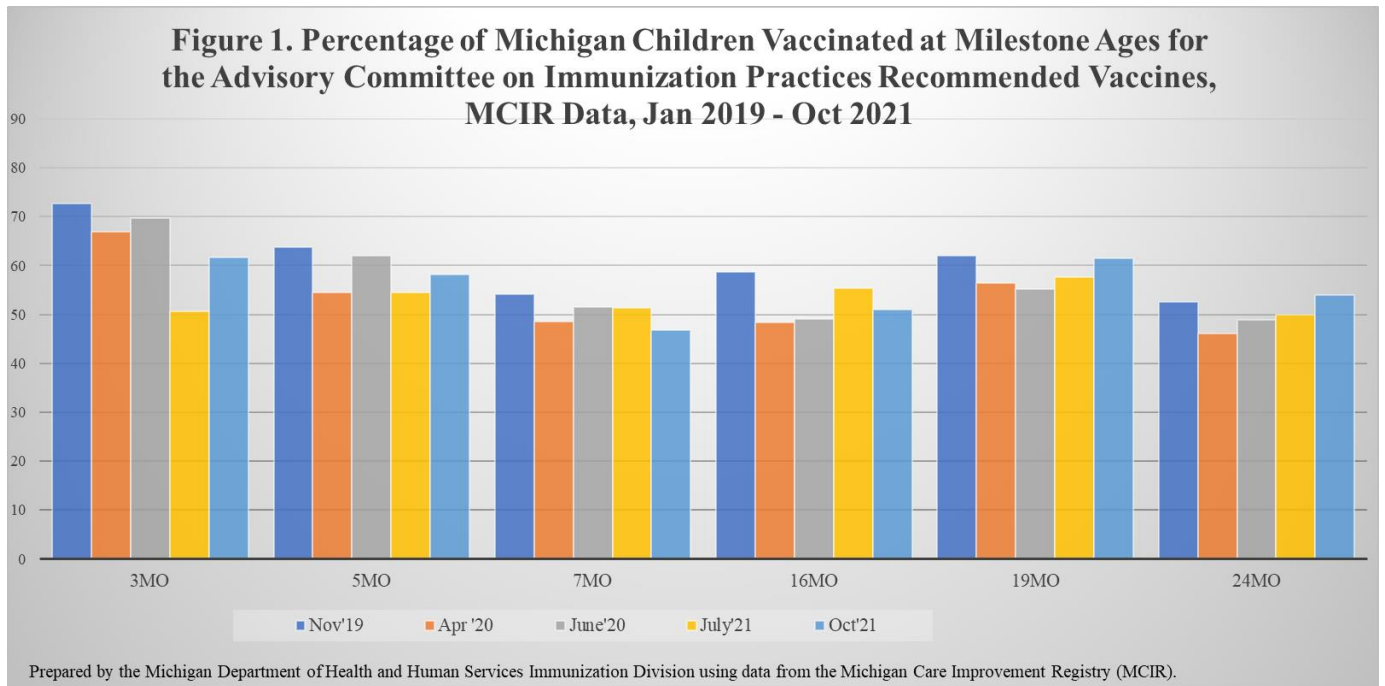
- Michigan's immunization providers are required to report, within 72 hours, all vaccinations administered to persons born after December 31, 1993, and less than 20 years of age in MCIR, unless the parent, guardian, or person *in loco parentis* of the child who received the immunizing agent objects by written notice (as of March 2020, less than 0.1% of children less than 19 years of age had been opted out). Vaccination record submission to the MCIR for adults 20 years and older is strongly encouraged but is not required.
- Just before the pandemic, the MDHHS Division for Vital Records and Health Statistics started the transition to a new system to report electronic birth certificates. This transition may continue to cause delays in hepatitis B birth dose reporting.
- Dose administration figure intervals were updated from monthly to weekly (MMWR week) to better visualize administration patterns during the pandemic.
 - The **Morbidity and Mortality Weekly Report (MMWR)** week is the week of the epidemiologic year for the National Notifiable Diseases Surveillance System (NNDSS). MMWR week does not fall on the same dates every year. MMWR weeks run from Sunday through Saturday.
- Please note that non-standard events (i.e., not holidays or back to school physicals) can impact dose administrations. For example, the record cold weather experienced in late January 2019 occurred in 2019 MMWR week 5.

MCIR Regions

| |
|---|
| Region 1 |
| City of Detroit, Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw and Wayne |
| Region 2 |
| Allegan, Berrien, Branch, Calhoun, Cass, Hillsdale, Ionia, Jackson, Kalamazoo, Kent, Lenawee, Muskegon, Ottawa, St. Joseph, and Van Buren |
| Region 3 |
| Barry, Clinton, Eaton, Gratiot, Ingham, and Montcalm |
| Region 4 |
| Bay, Genesee, Huron, Lapeer, Midland, Saginaw, Sanilac, Shiawassee, and Tuscola |
| Region 5 |
| Alcona, Alpena, Antrim, Arenac, Benzie, Charlevoix, Cheboygan, Clare, Crawford, Emmet, Gladwin, Grand Traverse, Iosco, Isabella, Kalkaska, Lake, Leelanau, Manistee, Mason, Mecosta, Missaukee, Montmorency, Newaygo, Oceana, Ogemaw, Oscoda, Osceola, Otsego, Presque Isle, Roscommon, and Wexford |

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| Region 6 |
| Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon, and Schoolcraft |

1. Child Coverage by Milestone Vaccination Ages



| Table 1. Percentage of children vaccinated for the ACIP recommended vaccines at milestone ages* by MCIR region, October 31, 2021 | | | | | | |
|---|------------|------------|------------|-------------|-------------|-------------|
| | 3mo | 5mo | 7mo | 16mo | 19mo | 24mo |
| Region 1 | 54.2 | 51.4 | 38.6 | 43.9 | 58.5 | 52.0 |
| Region 2 | 72.3 | 69.4 | 60.8 | 63.7 | 67.5 | 58.7 |
| Region 3 | 71.3 | 63.6 | 51.8 | 57.3 | 64.2 | 54.5 |
| Region 4 | 67.1 | 62.4 | 53.3 | 51.7 | 59.9 | 53.4 |
| Region 5 | 66.2 | 60.9 | 48.3 | 57.0 | 61.6 | 53.1 |
| Region 6 | 70.7 | 61.9 | 50.0 | 53.8 | 64.5 | 51.7 |

| Table 2. Percentage of children vaccinated for the ACIP recommended vaccines at milestone ages* by Medicaid status, October 31, 2021 | | | | | | |
|---|------------|------------|------------|-------------|-------------|-------------|
| | 3mo | 5mo | 7mo | 16mo | 19mo | 24mo |
| Medicaid | 65.6 | 60.9 | 49.1 | 49.5 | 54.0 | 45.6 |
| Non-Medicaid | 58.6 | 56.1 | 44.8 | 52.1 | 69.6 | 62.8 |
| Difference | -7.0 | -4.8 | -4.3 | 2.6 | 15.6 | 17.2 |

*3 months — 2nd dose HepB, 1 rotavirus (Rota), 1 diphtheria, tetanus, and acellular pertussis (DTaP), 1 *Haemophilus influenzae* type b (Hib), 1 pneumococcal conjugate (PCV), 1 inactivated poliovirus (IPV); 5 months — 2 HepB, 2 Rota, 2 DTaP, 2 Hib, 2 PCV, 2 IPV; 7 months — 2 HepB, up-to-date (UTD) Rota, 3 DTaP, UTD Hib, 3 PCV, 2 IPV; 16 months — 2 HepB, 3 DTaP, UTD Hib, 4 PCV, 2 IPV, 1 measles, mumps, rubella (MMR), 1 varicella (Var); 19 months — 3 HepB, 4 DTaP, UTD Hib, 4 PCV, 3 IPV, 1 MMR, 1 Var; 24 months — 3 HepB, 4 DTaP, UTD Hib, 4 PCV, 3 IPV, 1 MMR, 1 Var, 2 hepatitis A.

2. Coverage by Region and Statewide

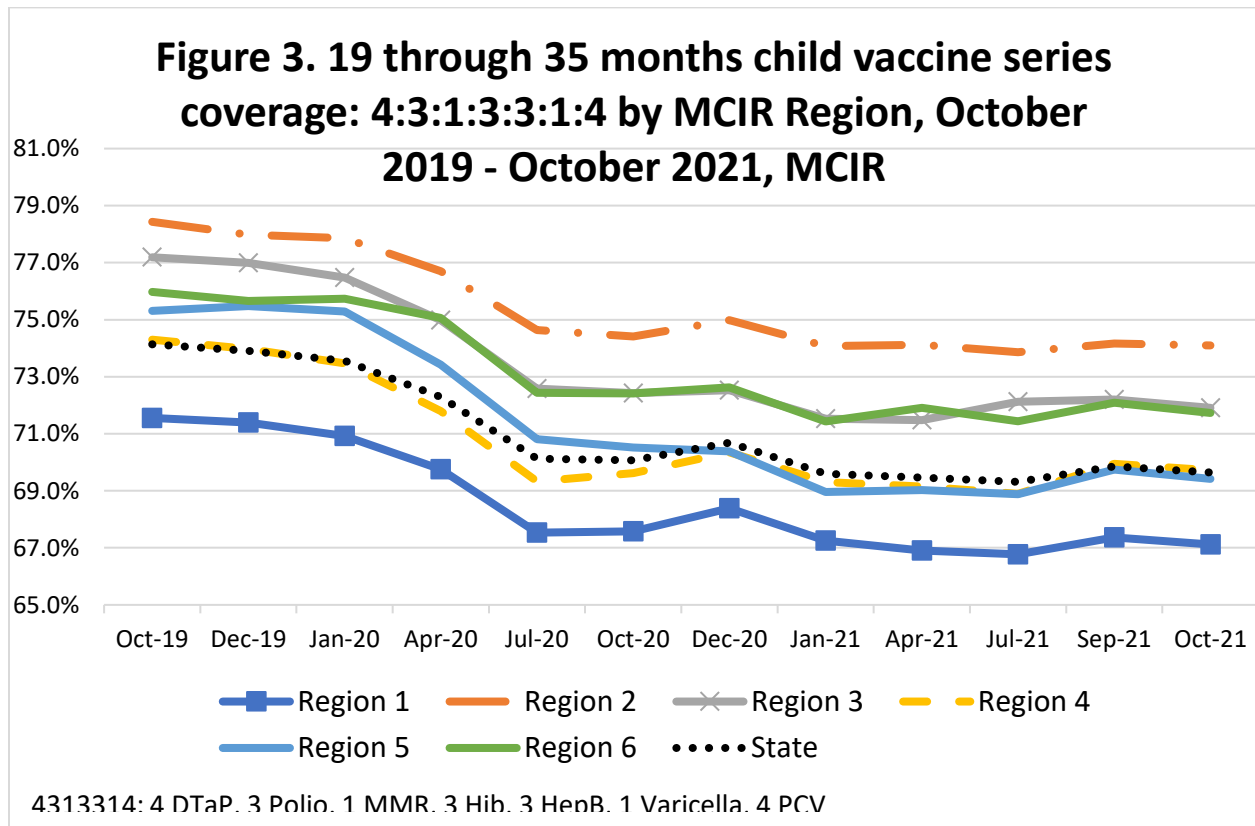
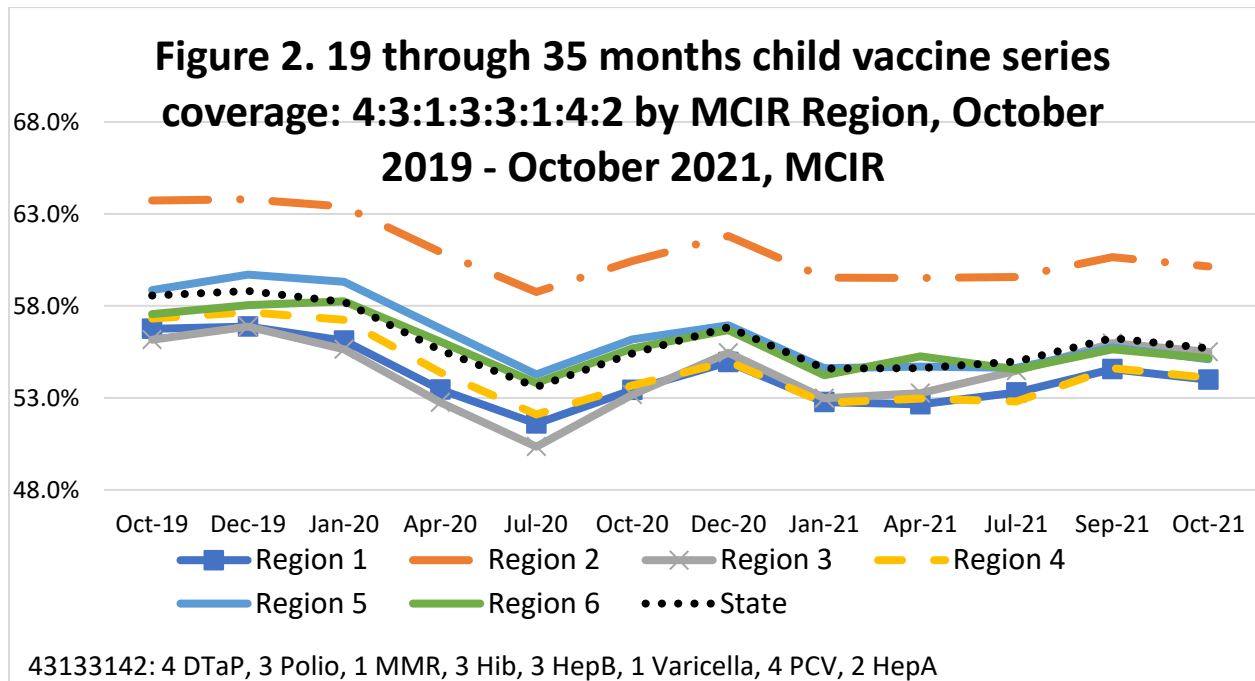
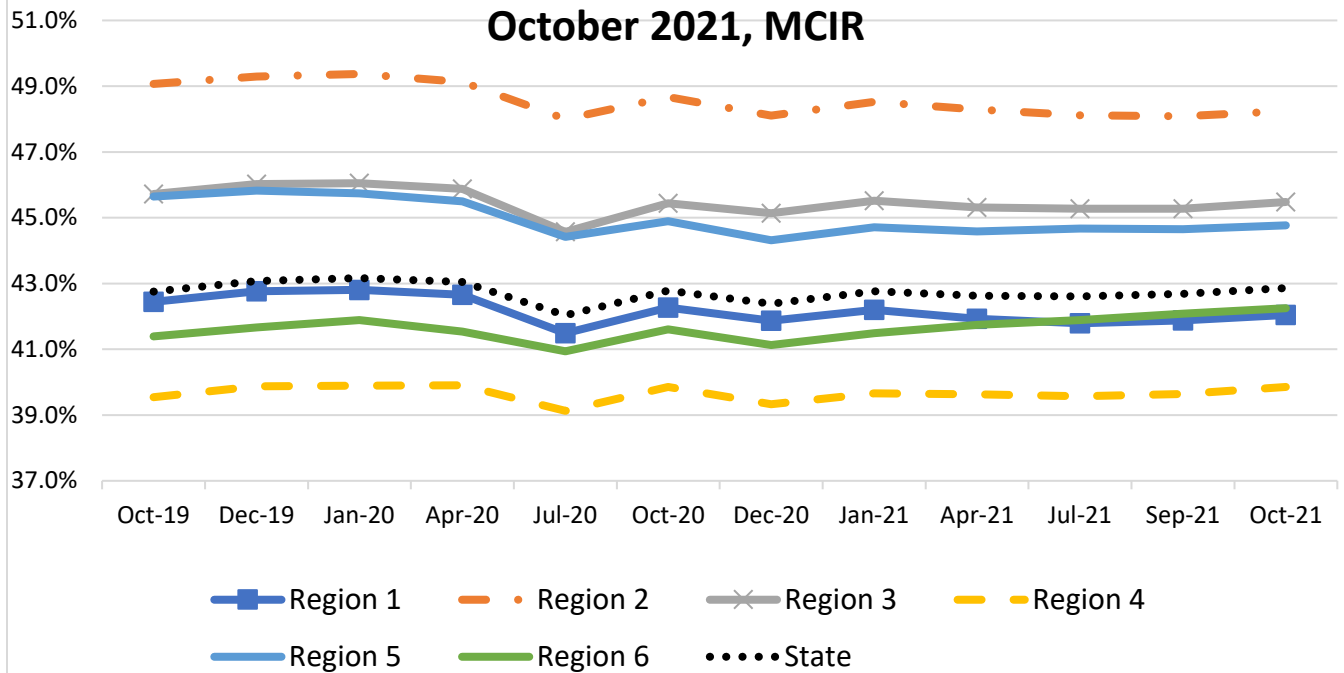
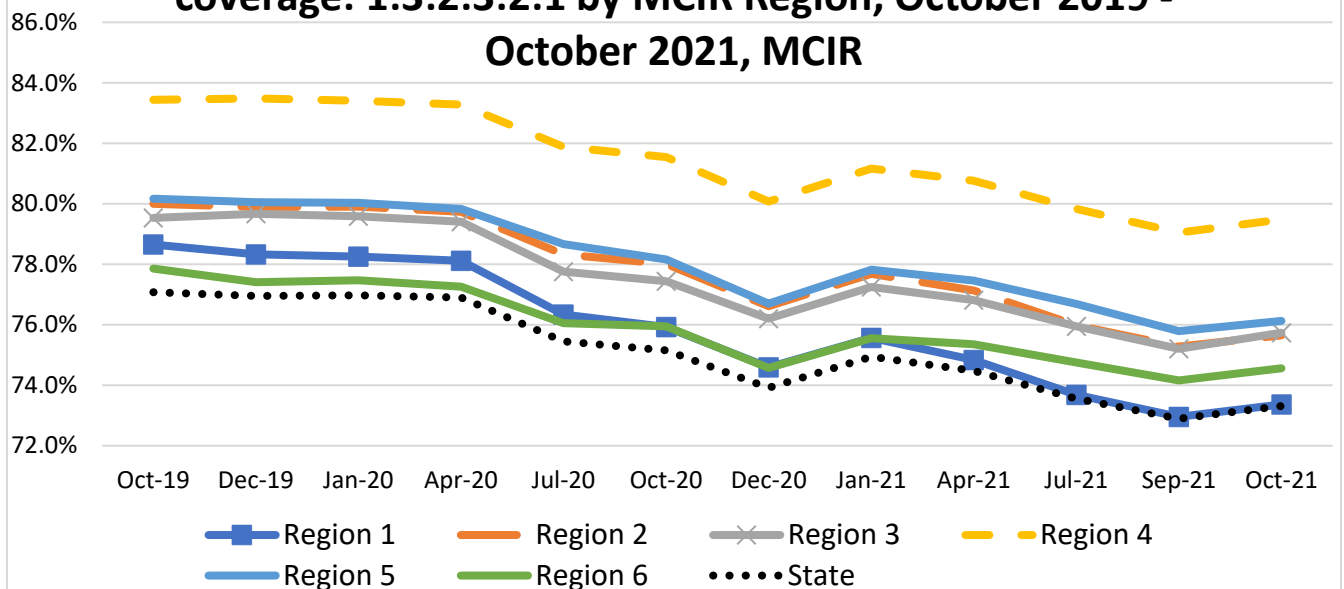


Figure 4. 13 through 17 years adolescent vaccine series coverage: 1:3:2:3:2:1:3 by MCIR Region, October 2019 - October 2021, MCIR



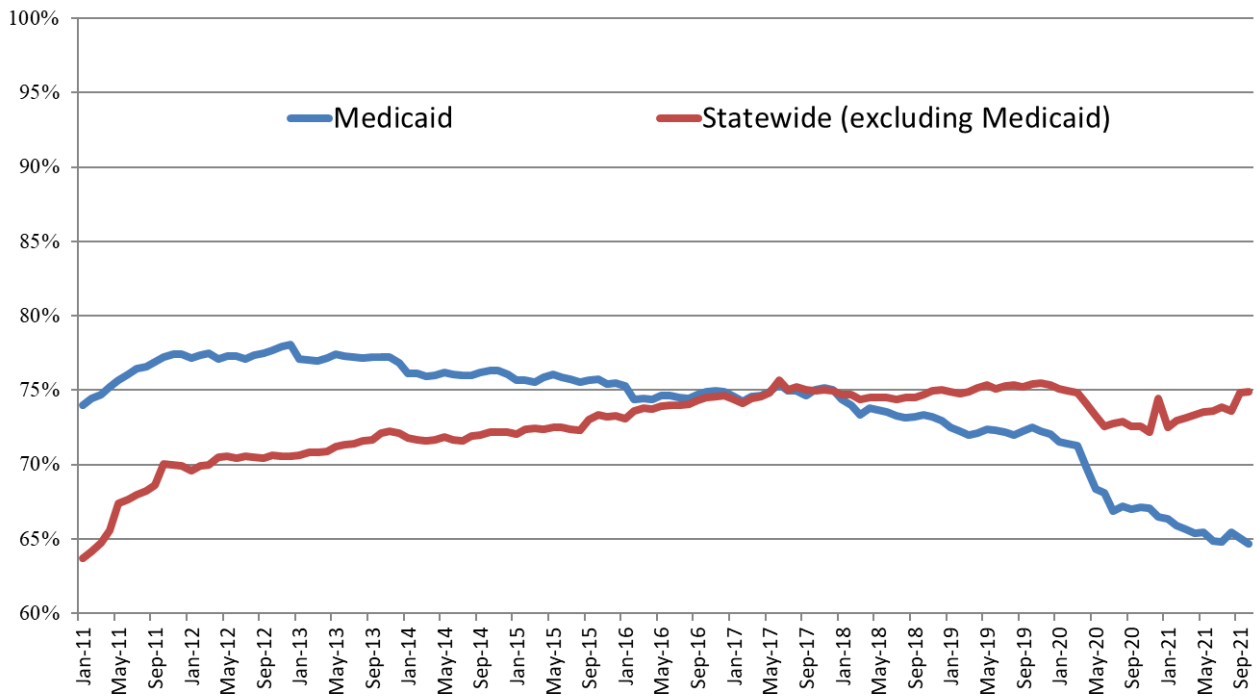
1323213: 1 Tdap, 3 Polio, 2 MMR, 3 HepB, 2 Varicella, 1 MenACWY, 2 or 3 HPV

Figure 5. 13 through 17 years adolescent vaccine series coverage: 1:3:2:3:2:1 by MCIR Region, October 2019 - October 2021, MCIR



132321: 1 Tdap. 3 Polio. 2 MMR. 3 HepB. 2 Varicella. 1 MenACWY

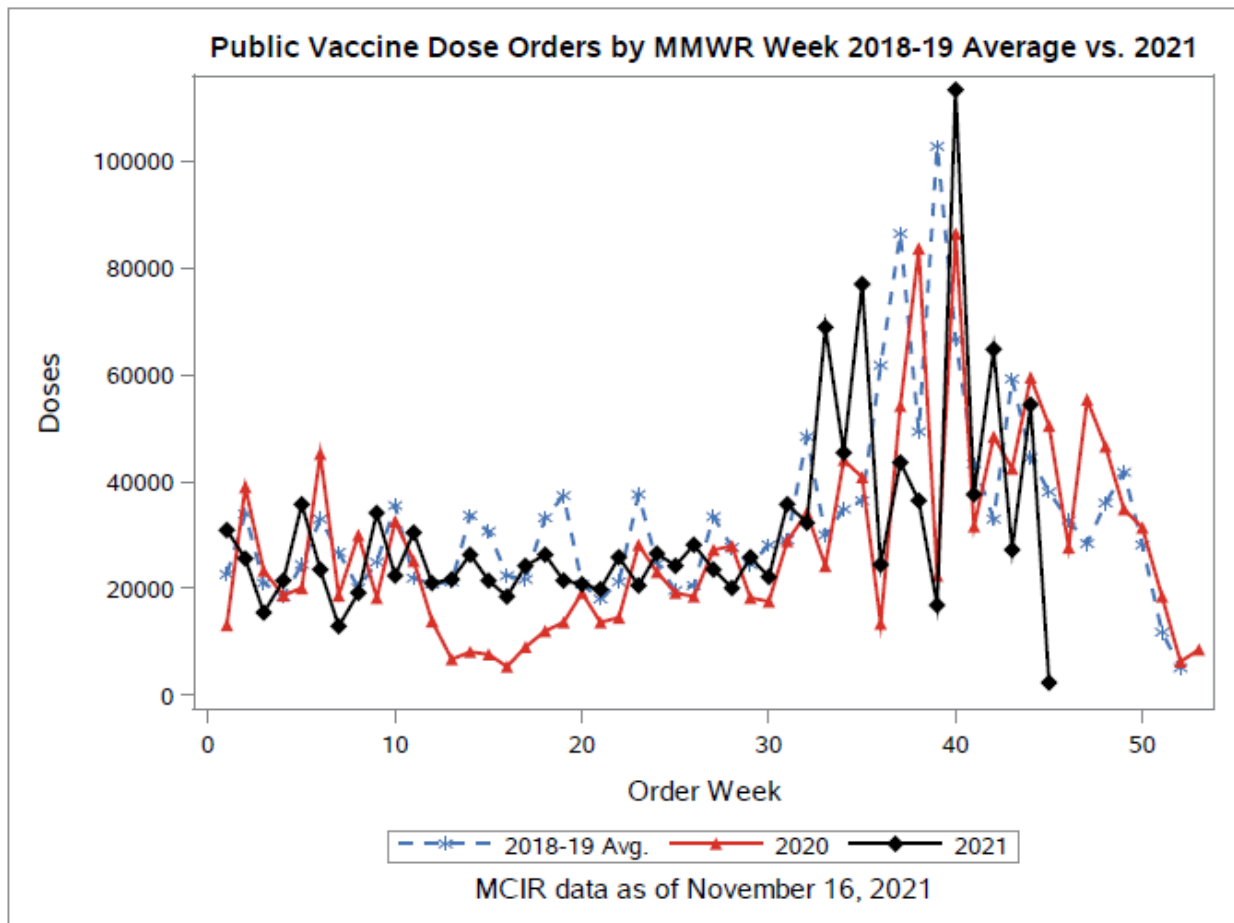
Figure 6. Estimated 4313314* Vaccination Coverage, Children 19 through 35 months, Michigan Care Improvement Registry, January 2011 - October 2021



*4313314 series: 4 DTaP, 3 Polio, 1 MMR, 3 Hib, 3 HepB, 1 Varicella, 4 PCV

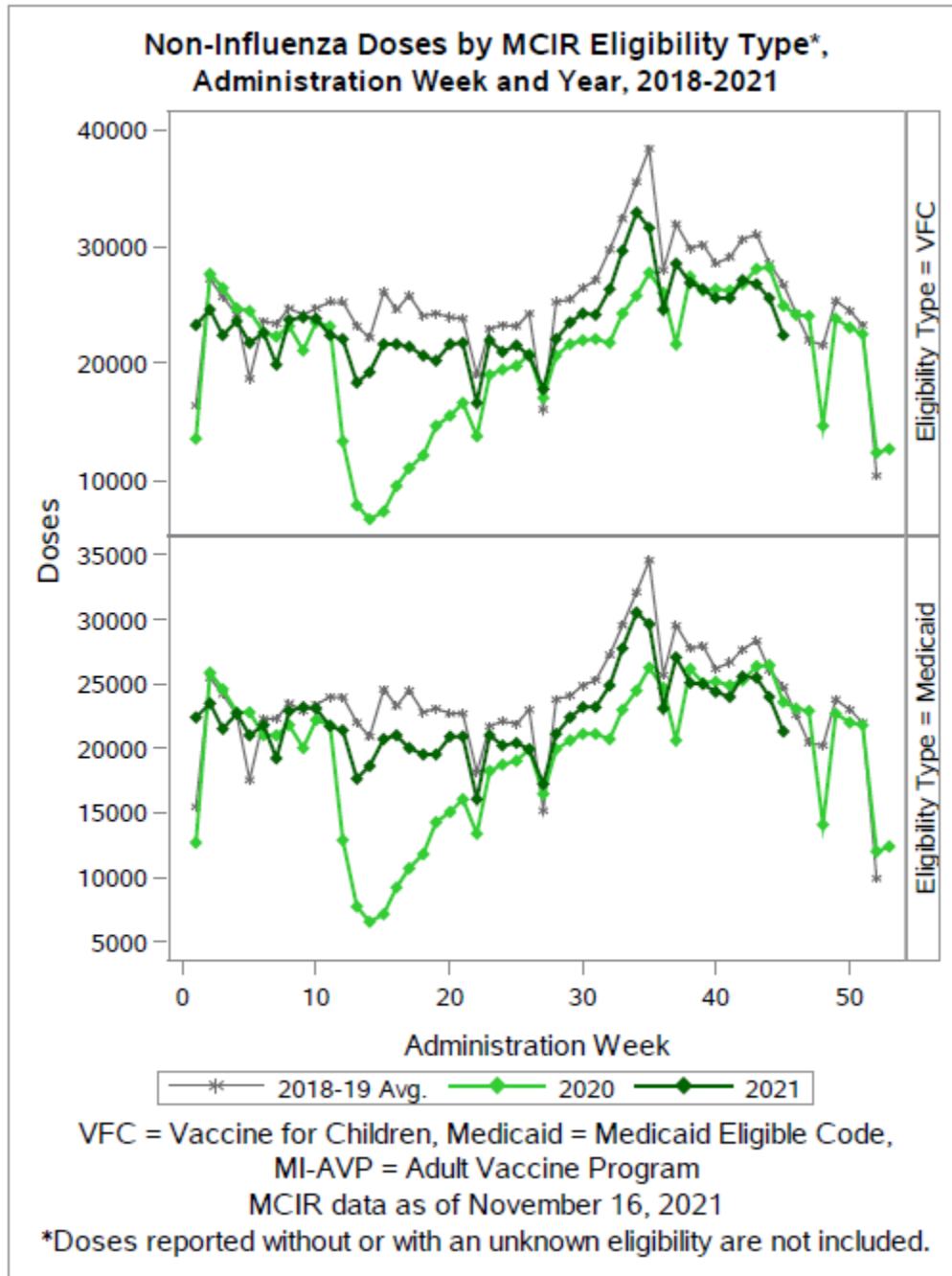
Prepared by the Michigan Department of Health and Human Services, Division of Immunization using data reported to the Michigan Care Improvement Registry (MCIR).

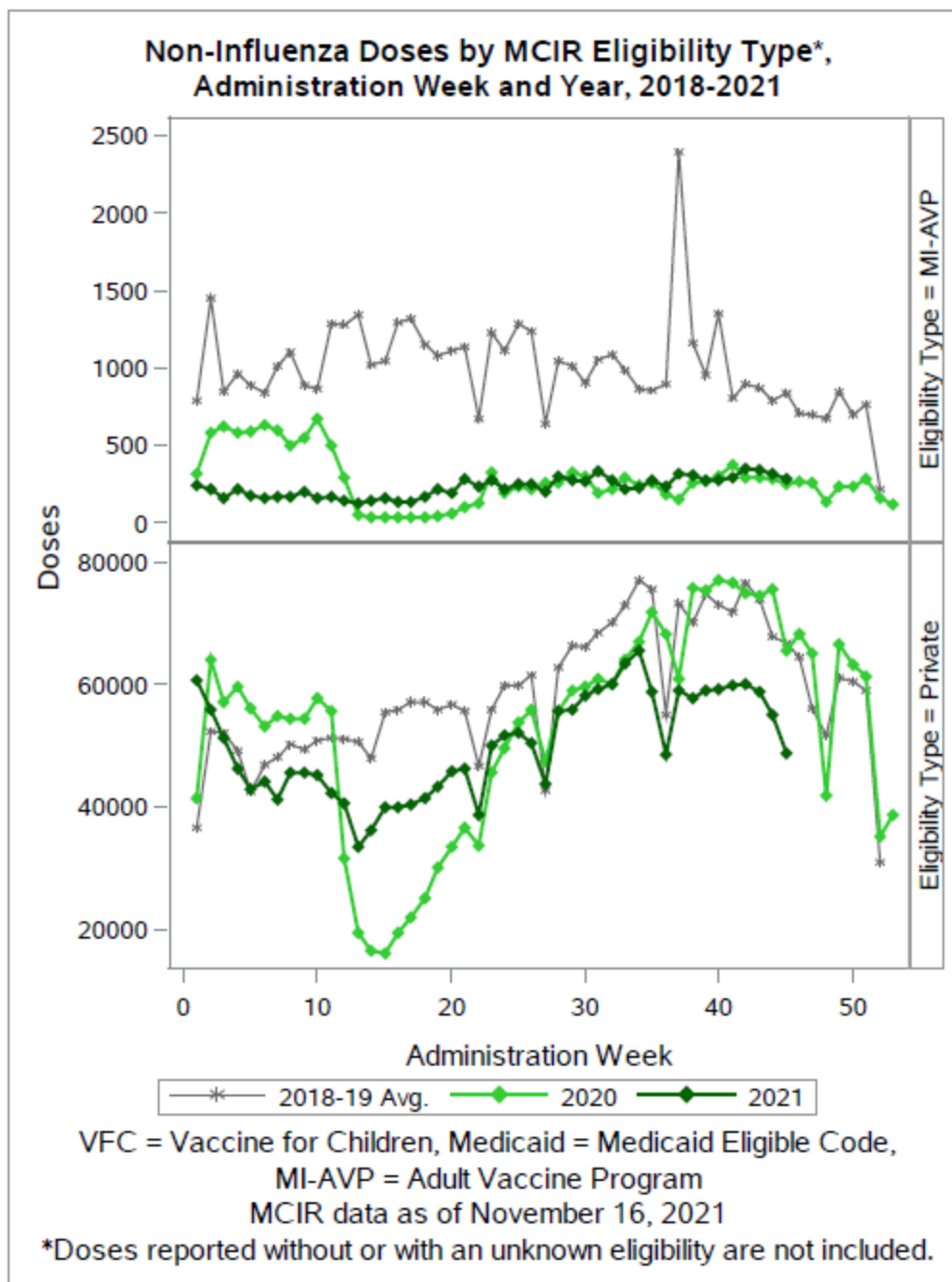
3. Public Dose Orders



4. Doses by Eligibility

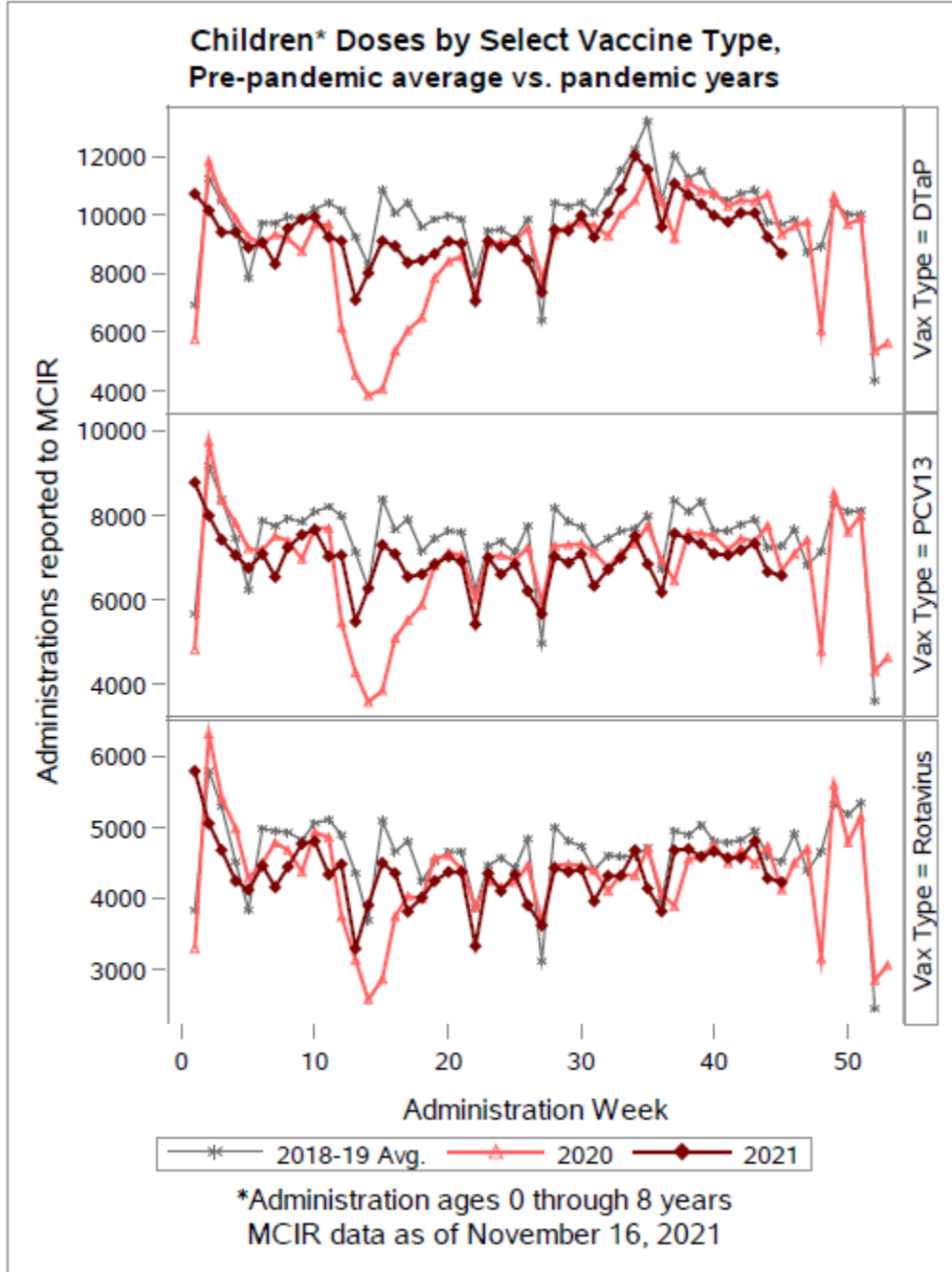
Please note that the vertical scales are adjusted for each eligibility type.

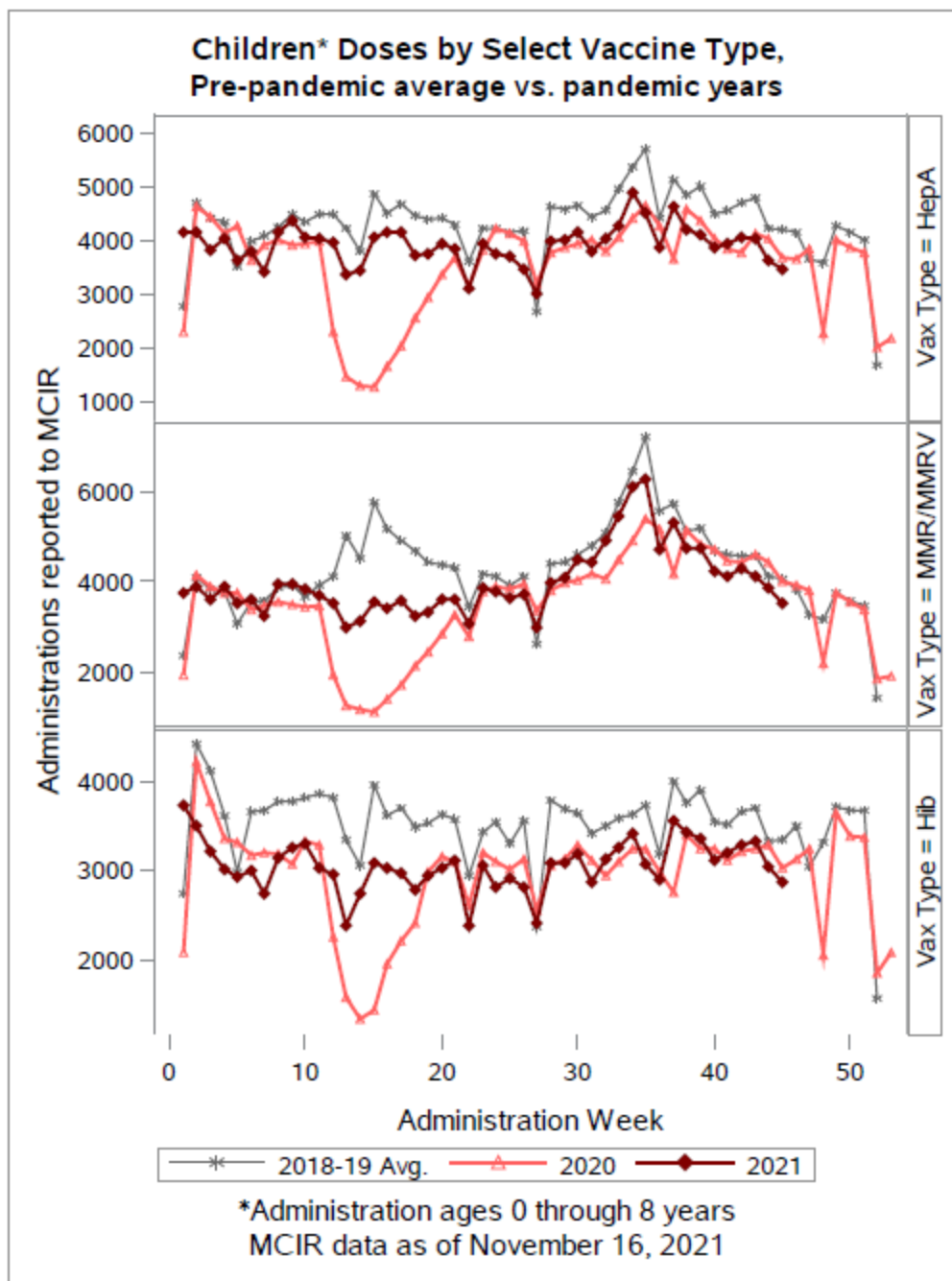


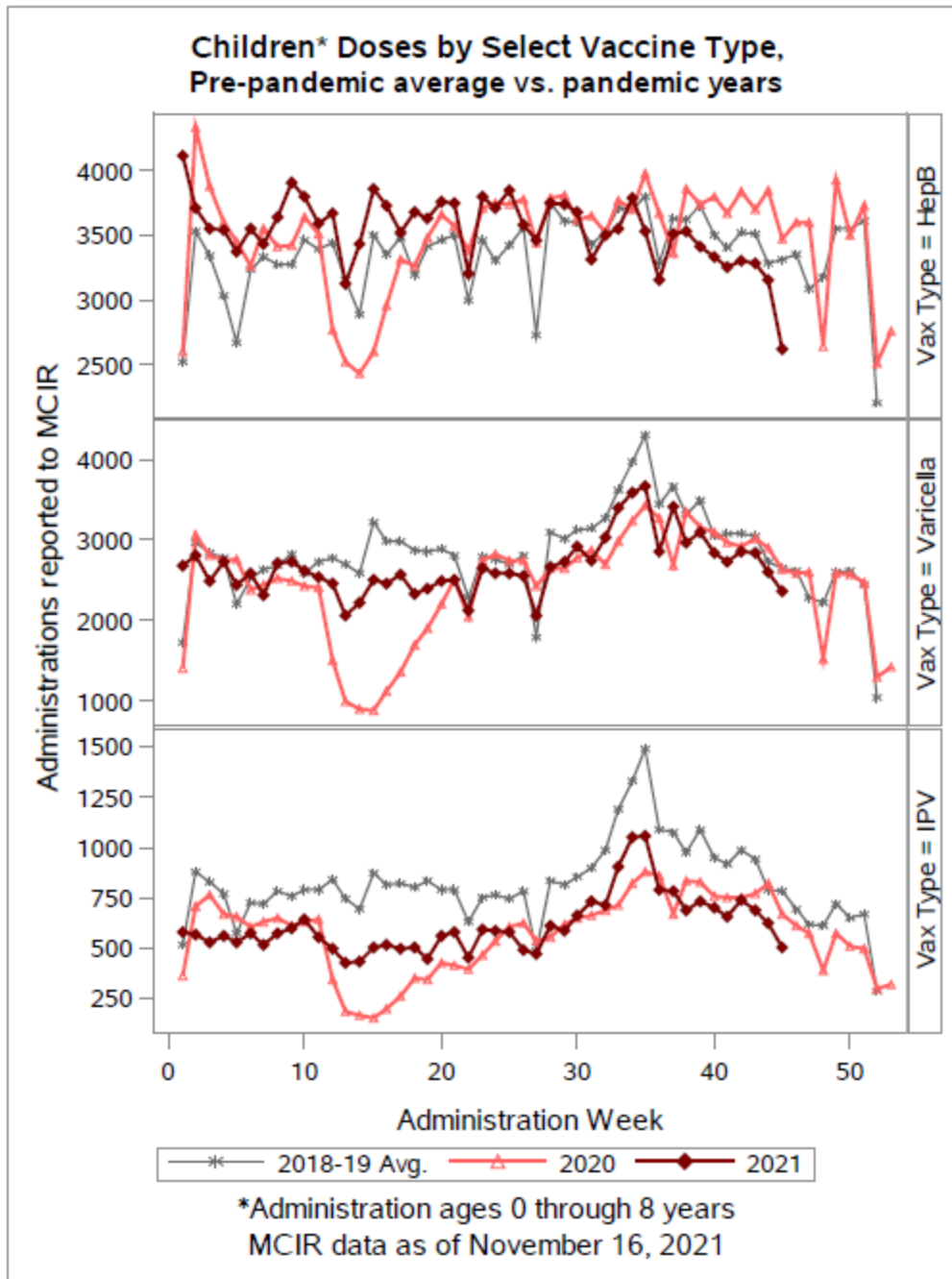


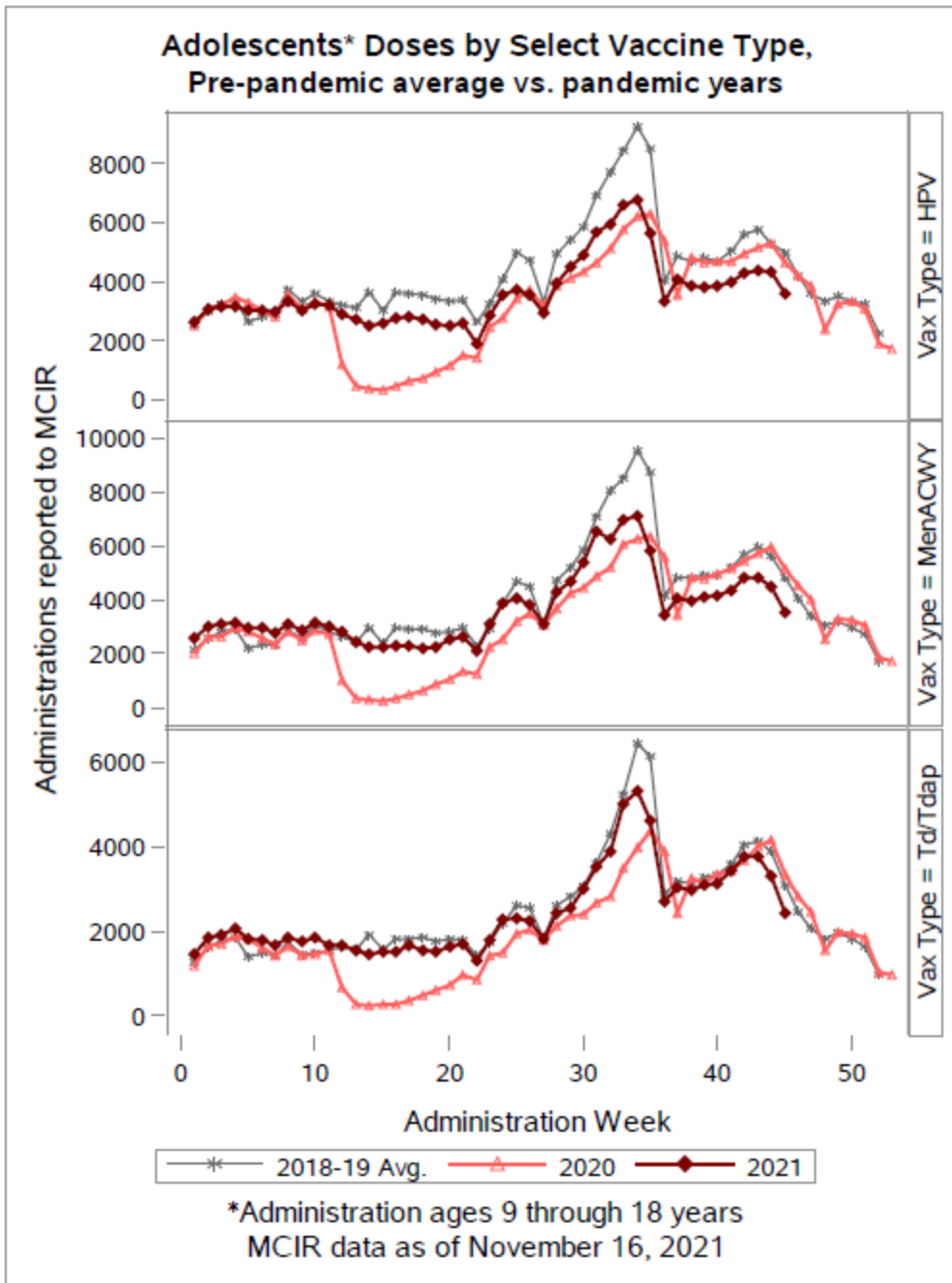
5. Doses by Vaccine Type and Age Group

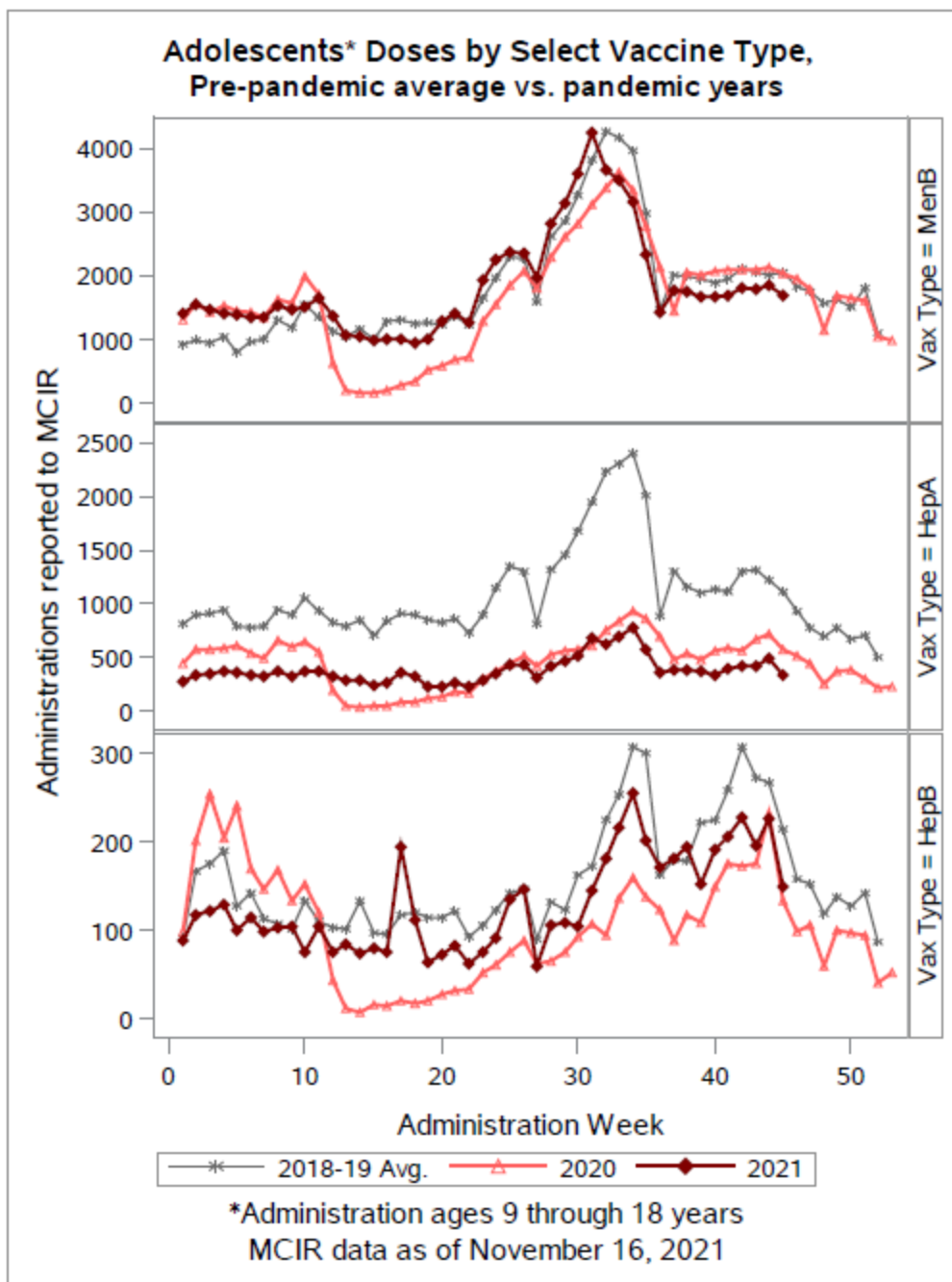
Please note that the vertical scales are adjusted for each vaccine type and age group. Vaccine types are ordered by decreasing frequency of doses reported.

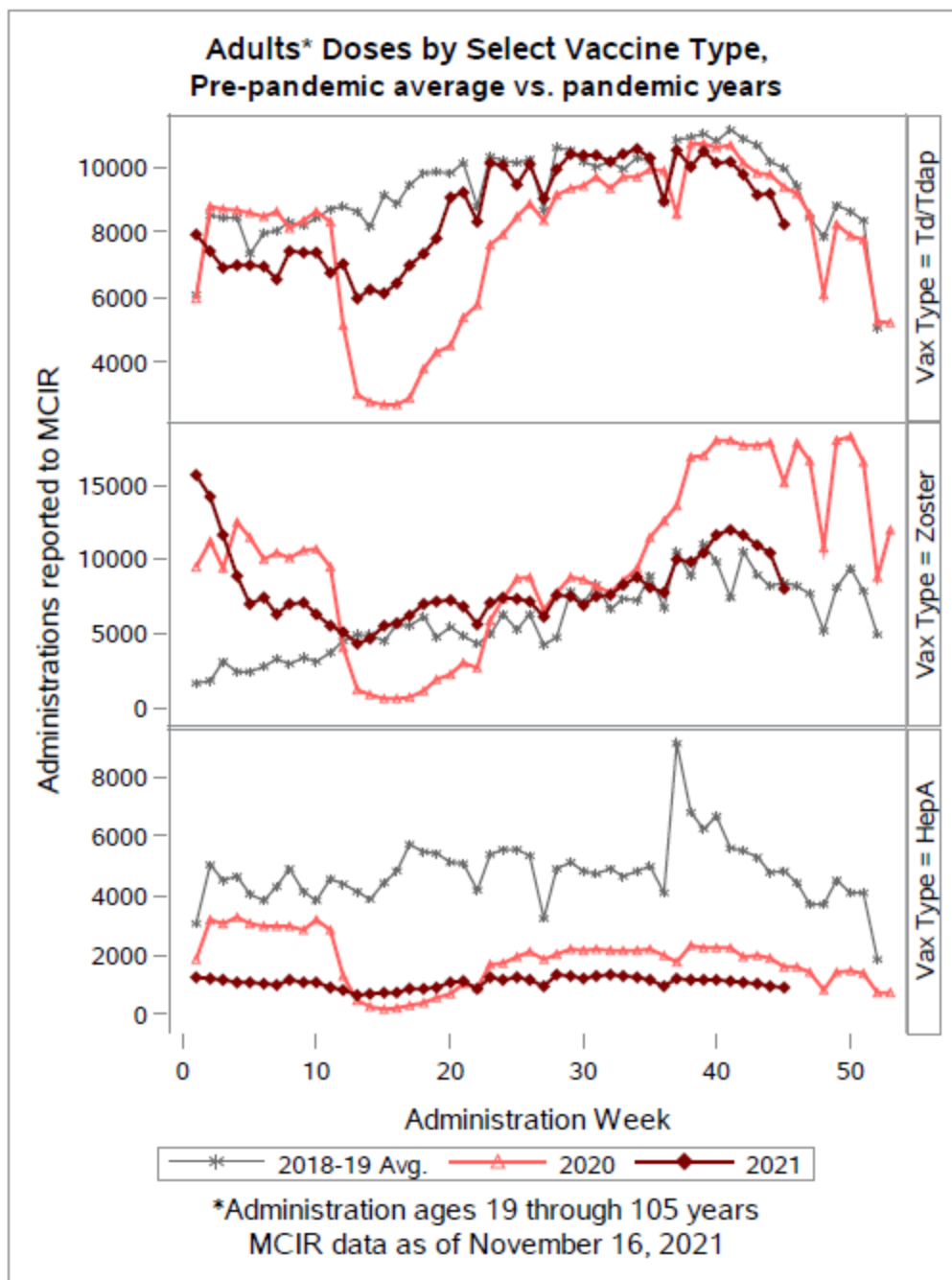


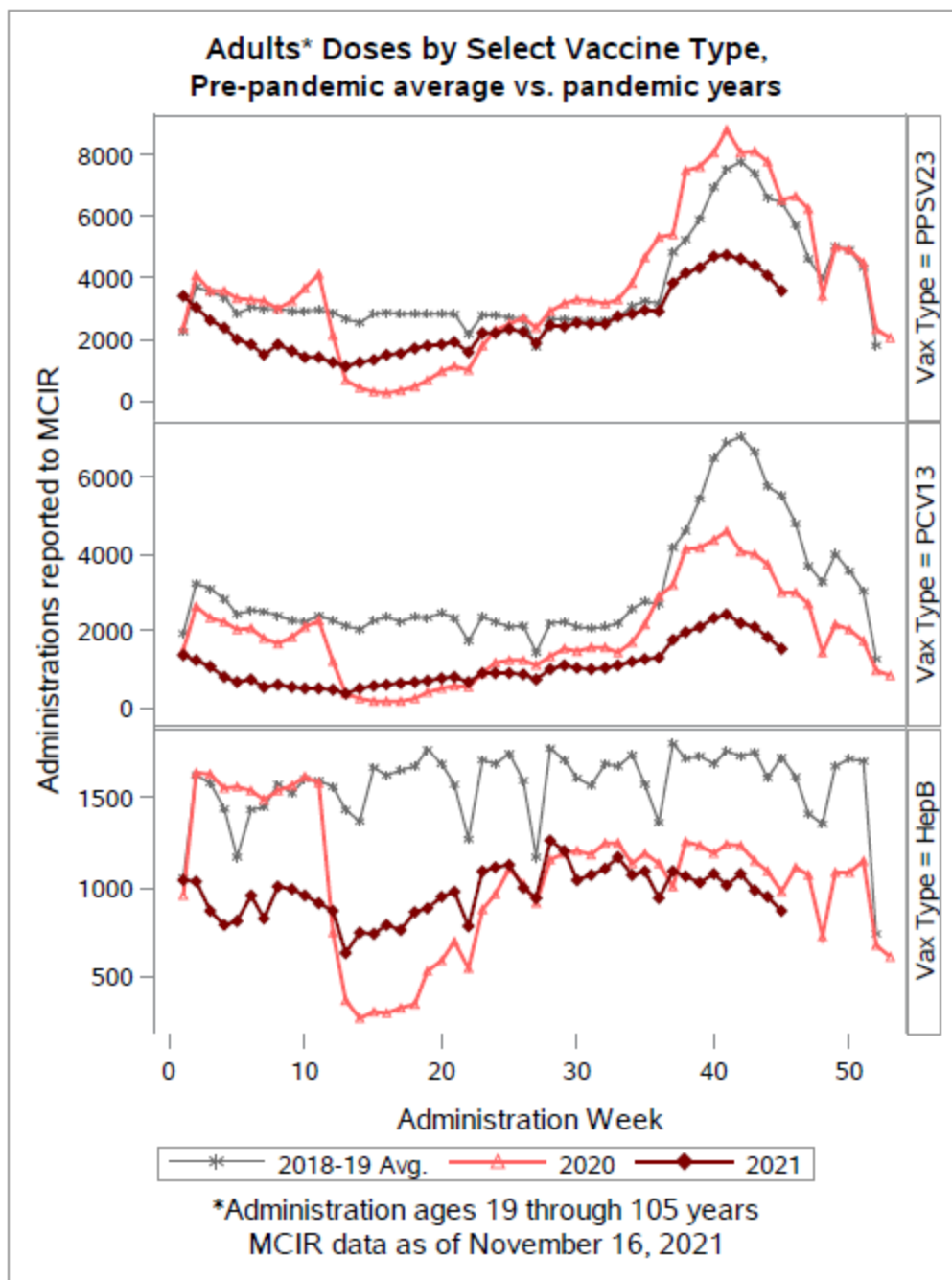


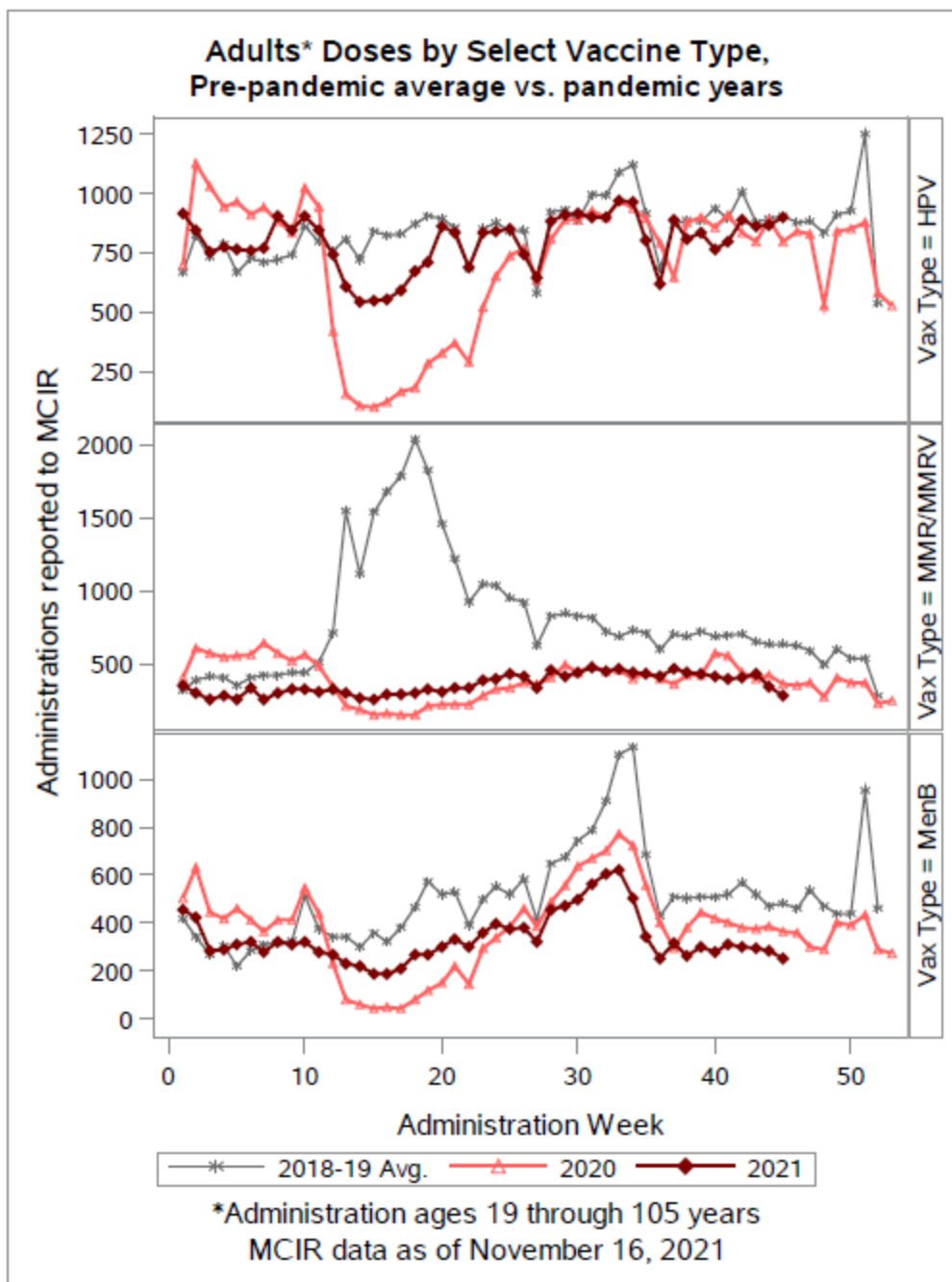






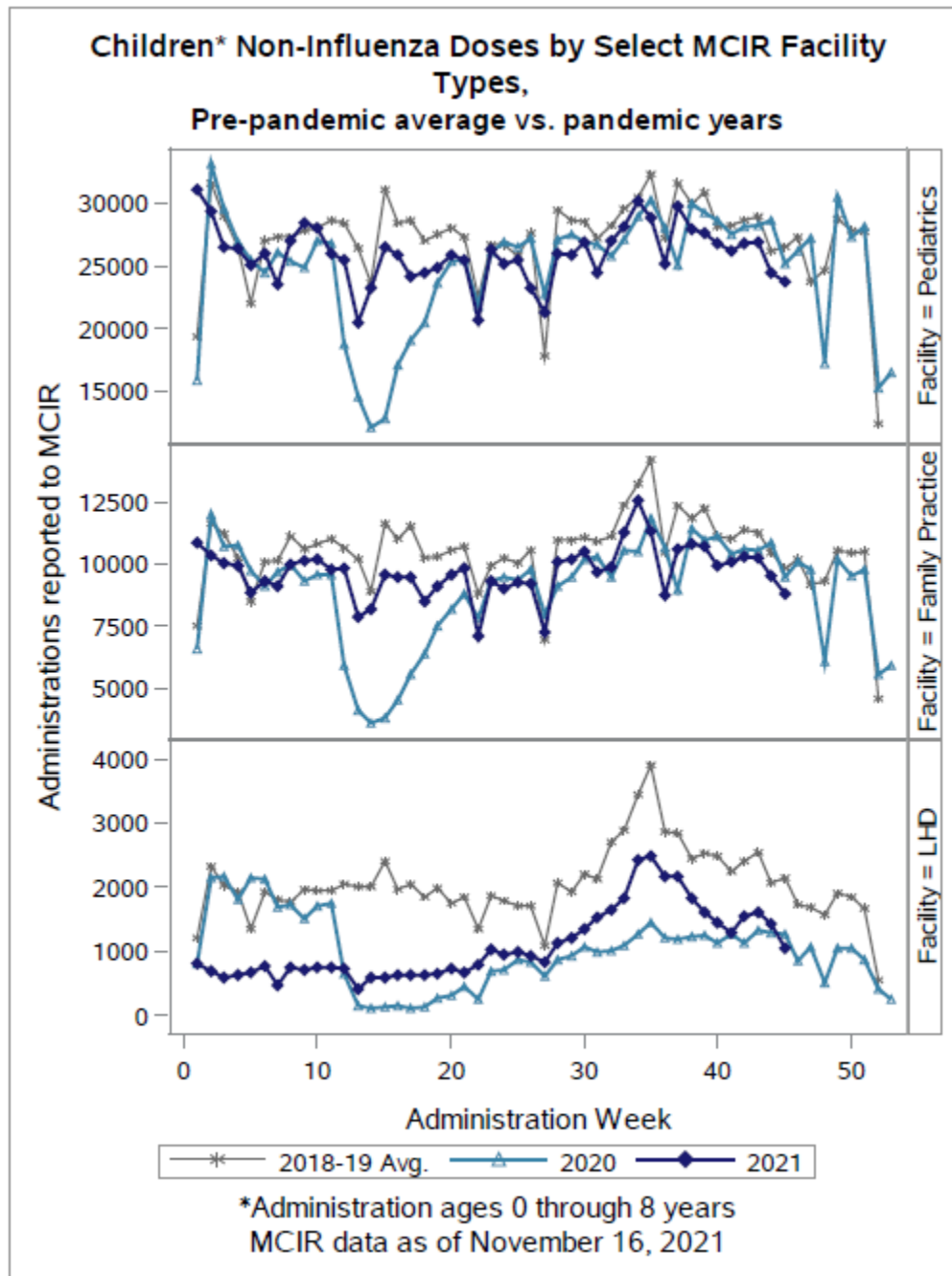




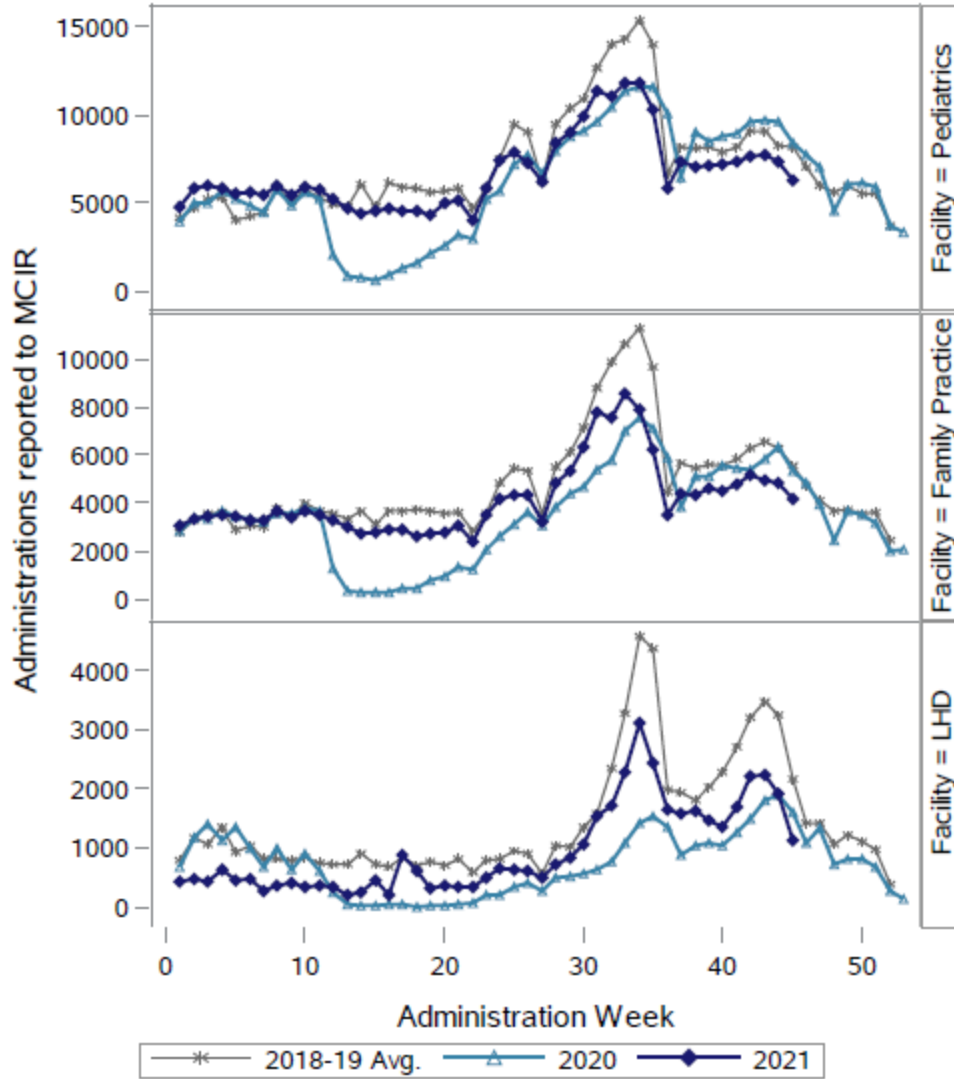


6. Doses by MCIR Facility Type and Age Group

Please note that the vertical scales are adjusted for each facility type and age group. Facility types are ordered by decreasing frequency of doses reported.

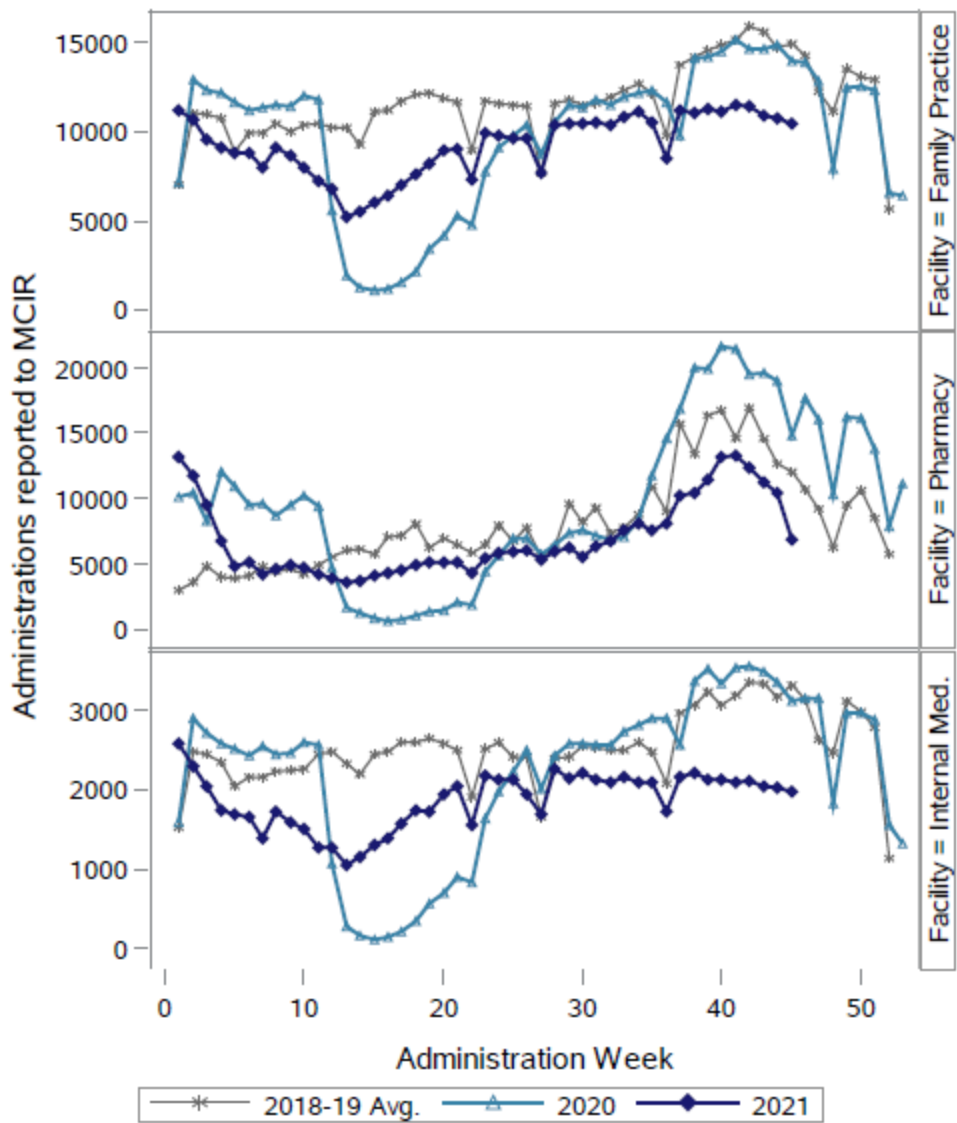


Adolescents* Non-Influenza Doses by Select MCIR Facility Types, Pre-pandemic average vs. pandemic years



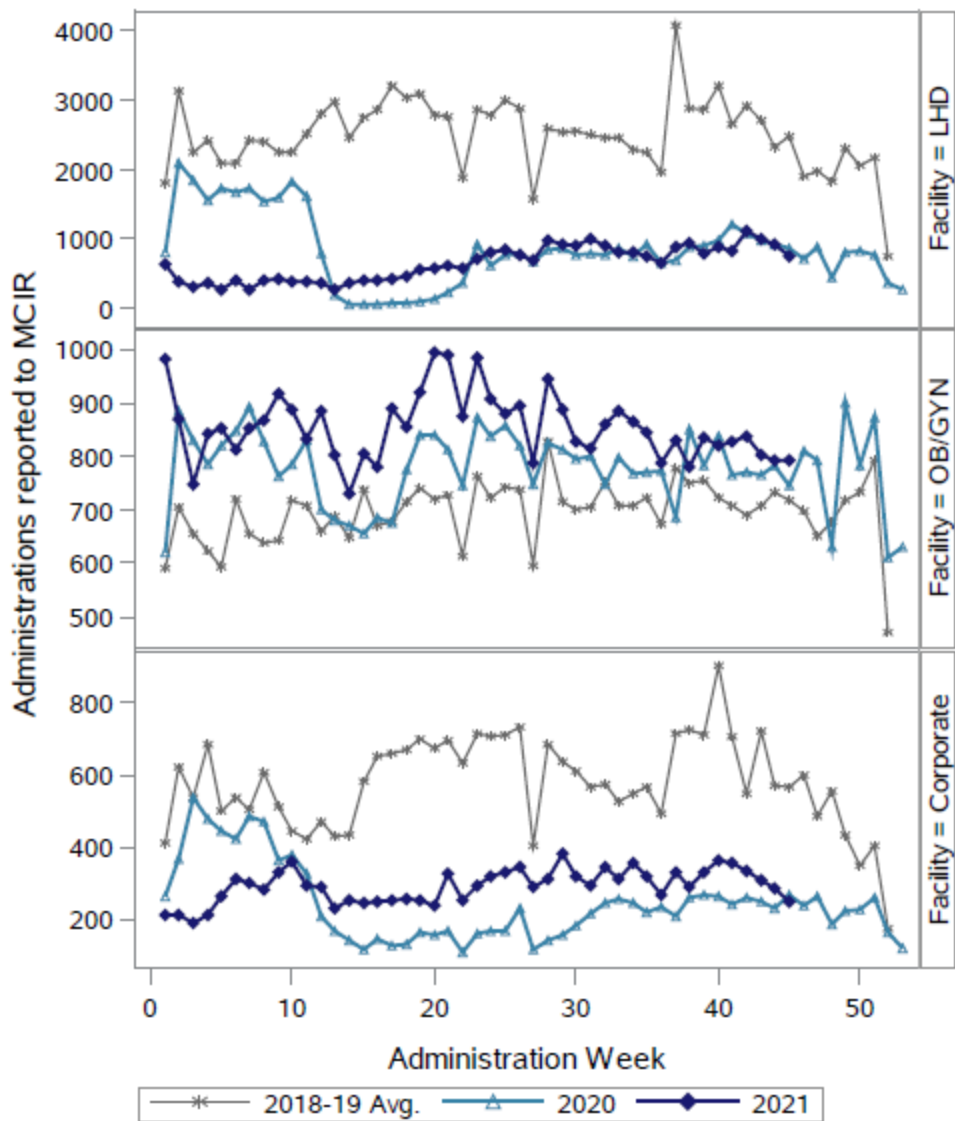
*Administration ages 9 through 18 years
MCIR data as of November 16, 2021

**Adults* Non-Influenza Doses by Select MCIR Facility Types,
Pre-pandemic average vs. pandemic years**



*Administration ages 19 through 105 years
MCIR data as of November 16, 2021

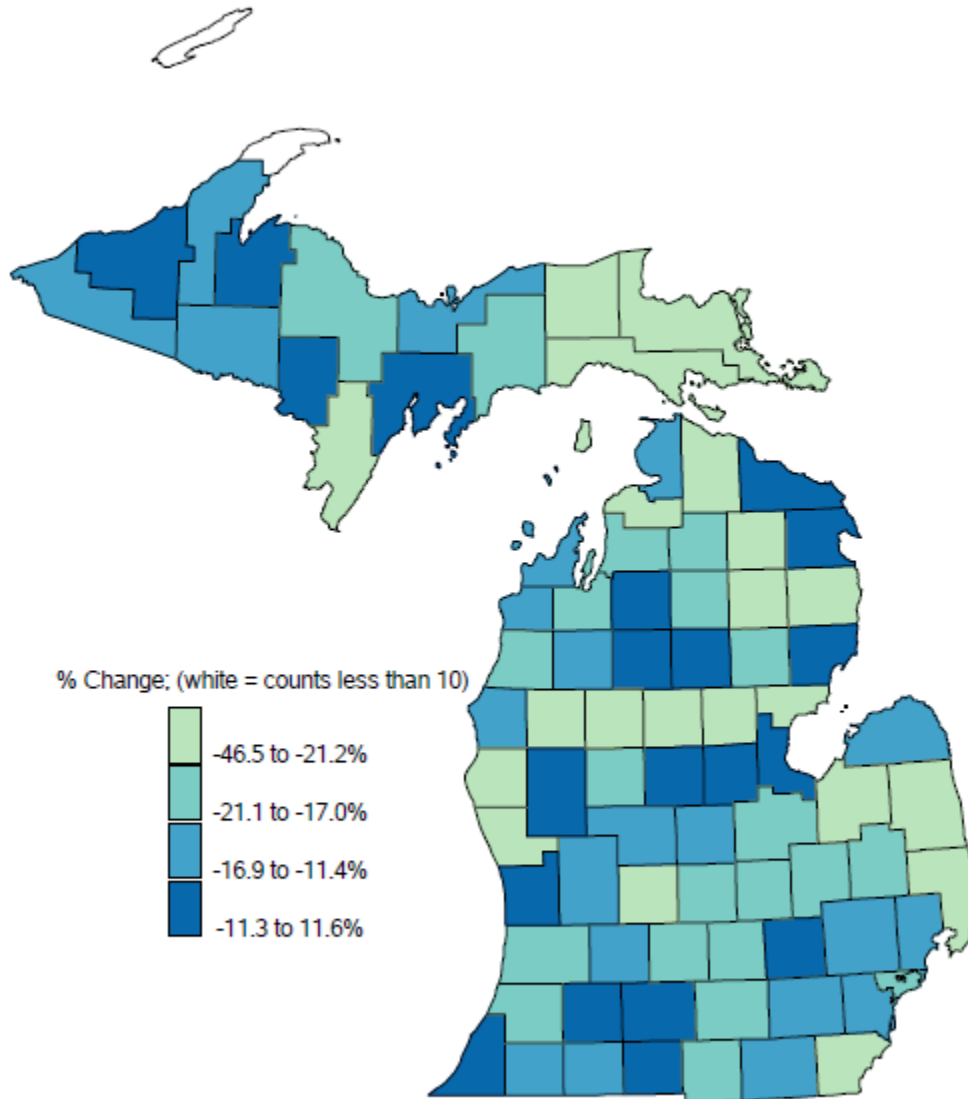
**Adults* Non-Influenza Doses by Select MCIR Facility Types,
Pre-pandemic average vs. pandemic years**



*Administration ages 19 through 105 years
MCIR data as of November 16, 2021

7. Percent Change in Doses Administered by County

Percent change* in Doses Administered Across the Lifespan in
January-September 2021 Compared to the Average of
January-September 2018 and 2019 by County, MCIR



*Percent Change in non-influenza doses reported in January-September 2021 compared to the average of January-September 2018 and 2019.

†Based on reporting facility county.

Prepared by the Michigan Department of Health and Human Services Immunization Division
using data from the Michigan Care Improvement Registry (MCIR).