

FOURTEENTH INTERNATIONAL
ROTAVIRUS SYMPOSIUM

MARCH 14–16 **2023** BALI INDONESIA

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Caritas
Baby Hospital
Bethlehem

Impact of introduction of Rotarix (2016-2018) and Rotavac (since 2018) in the West Bank, Palestine

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Background

- Rotavirus (RV) is the causative agent of 25-30% of viral gastroenteritis in Palestine
- Palestine introduced universal RV vaccination in May 2016
 - Rotarix
 - May 2016 – November 2018
 - Rotavac
 - November 2018 – Present

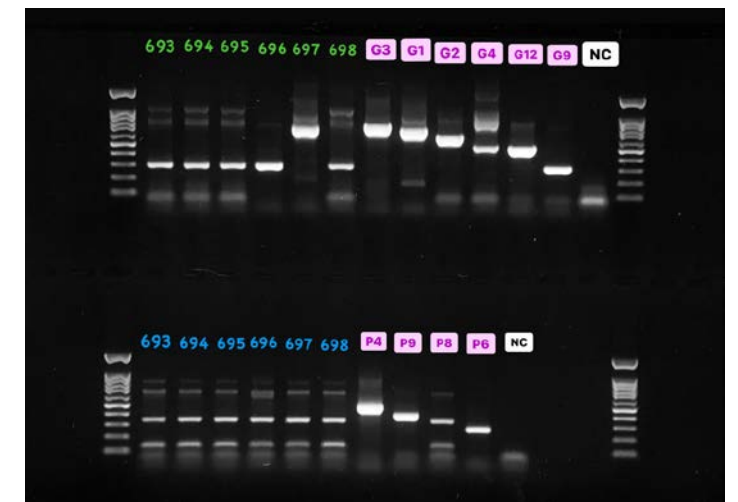
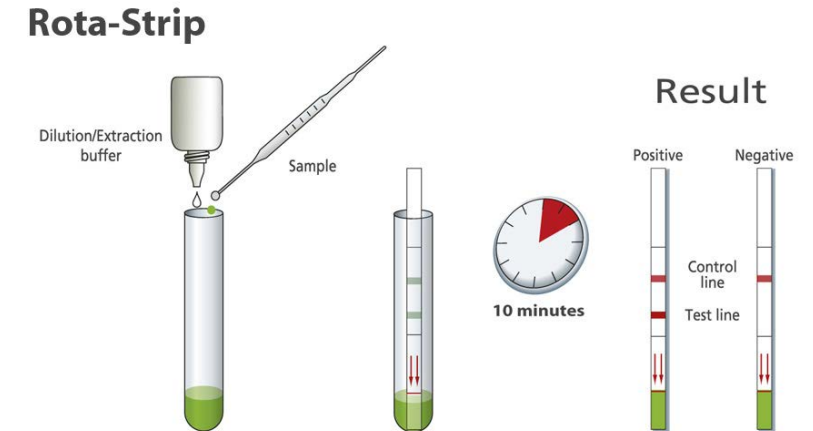
Study Design

- **Study period**
 - January 2015 till December 2022
- **Study location**
 - Caritas Baby Hospital
 - Catchment area of 750,000 individuals
 - Bethlehem / Hebron
- **Study population**
 - 12,197 children under 5 years of age presenting with gastroenteritis
- **RV Infected Patients Vaccination (2021-2022)**
 - Patients RV vaccinations records were obtained
 - 2021-2022
- **RV infected patients' clinical presentation**
 - 2022

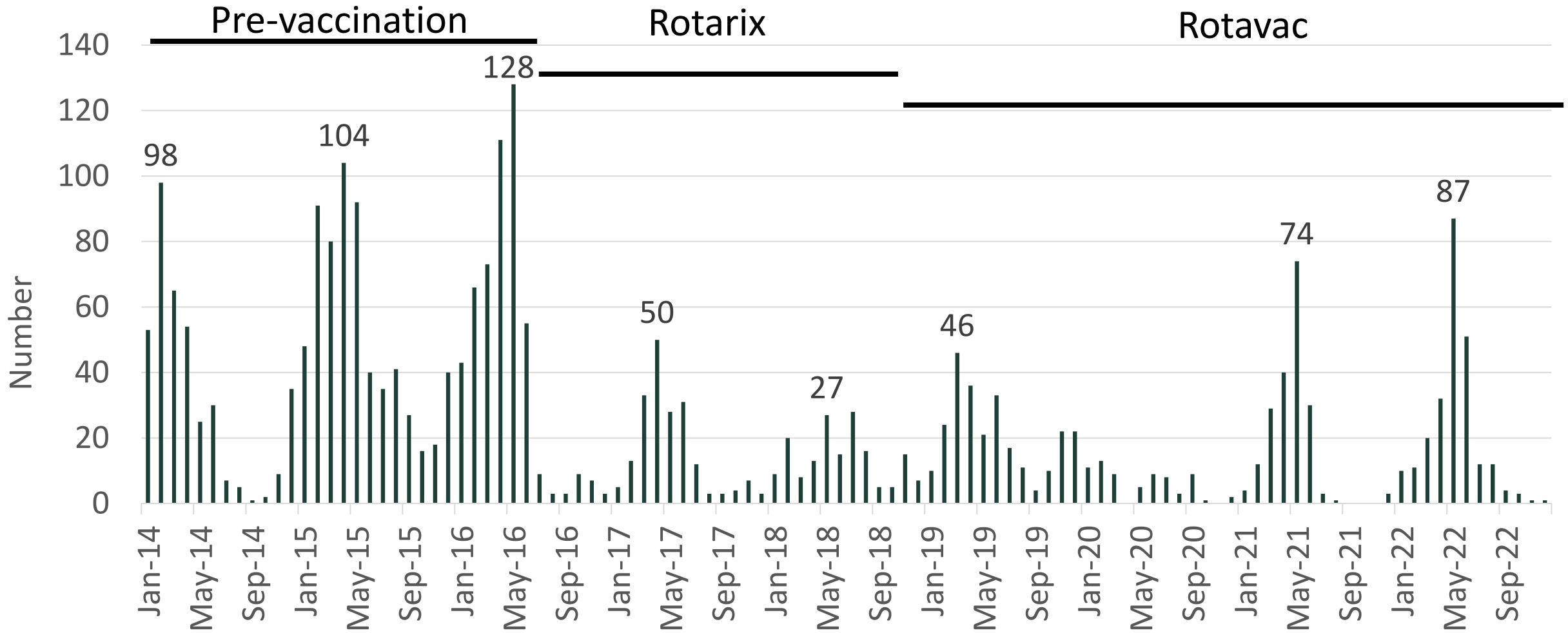


Rotavirus Laboratory Analysis

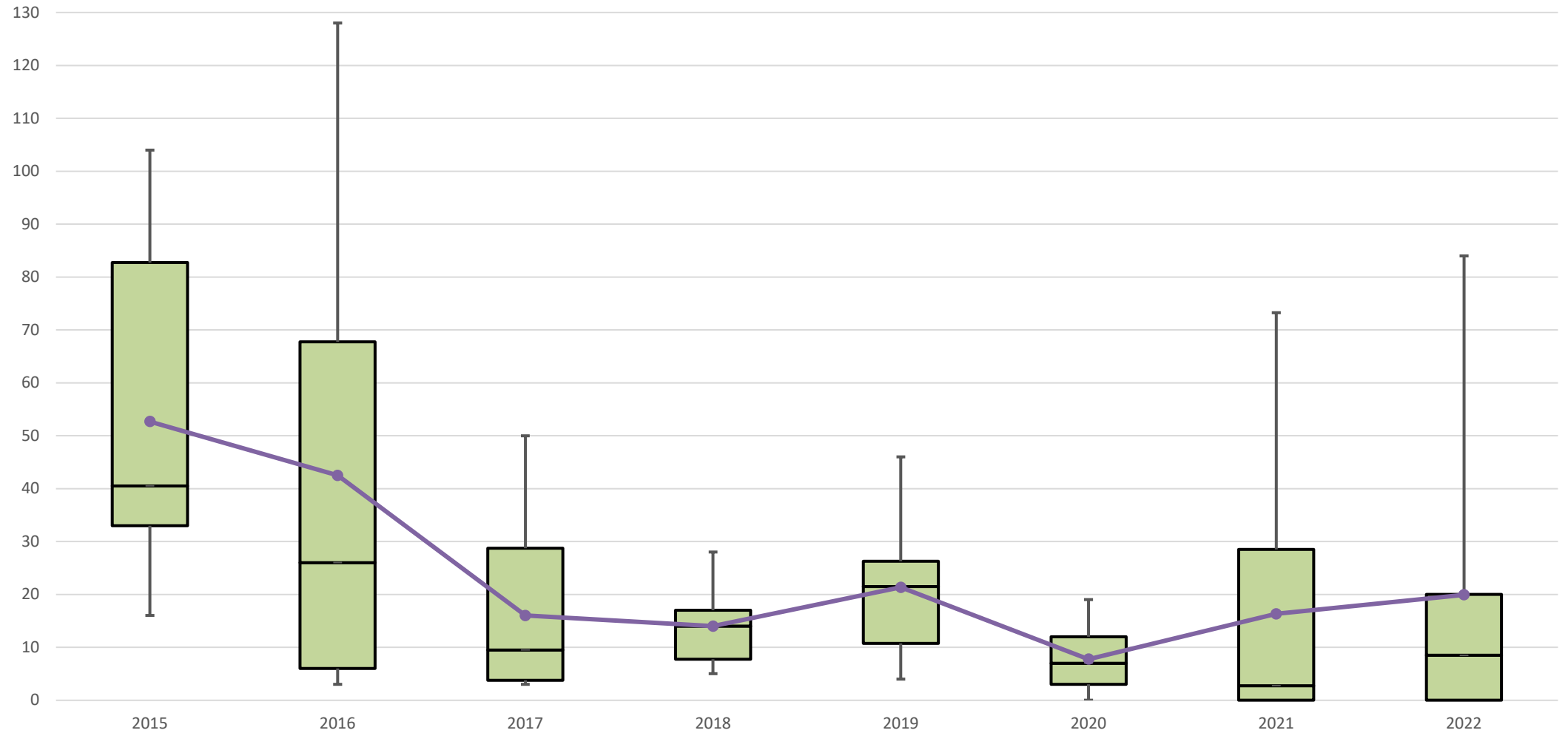
- **Loose/Watery stool samples**
 - Collected from patients and sent to the laboratory with in 20 minutes
- **RV antigen detection was determined with immunochromatography**
 - Novamed (Israel) or AMP (Australia)
- **RV genotyping according to WHO protocol**



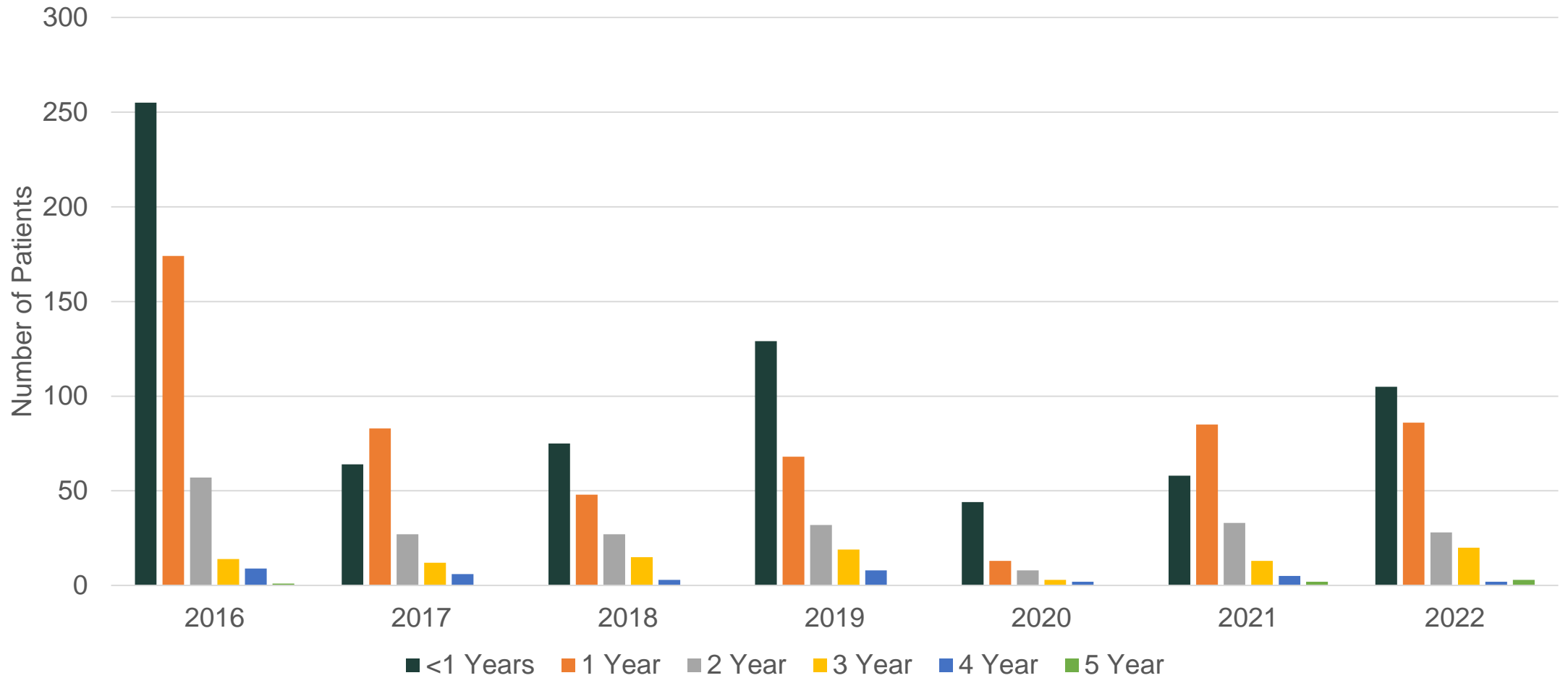
RV Cases Epidemiological Curve



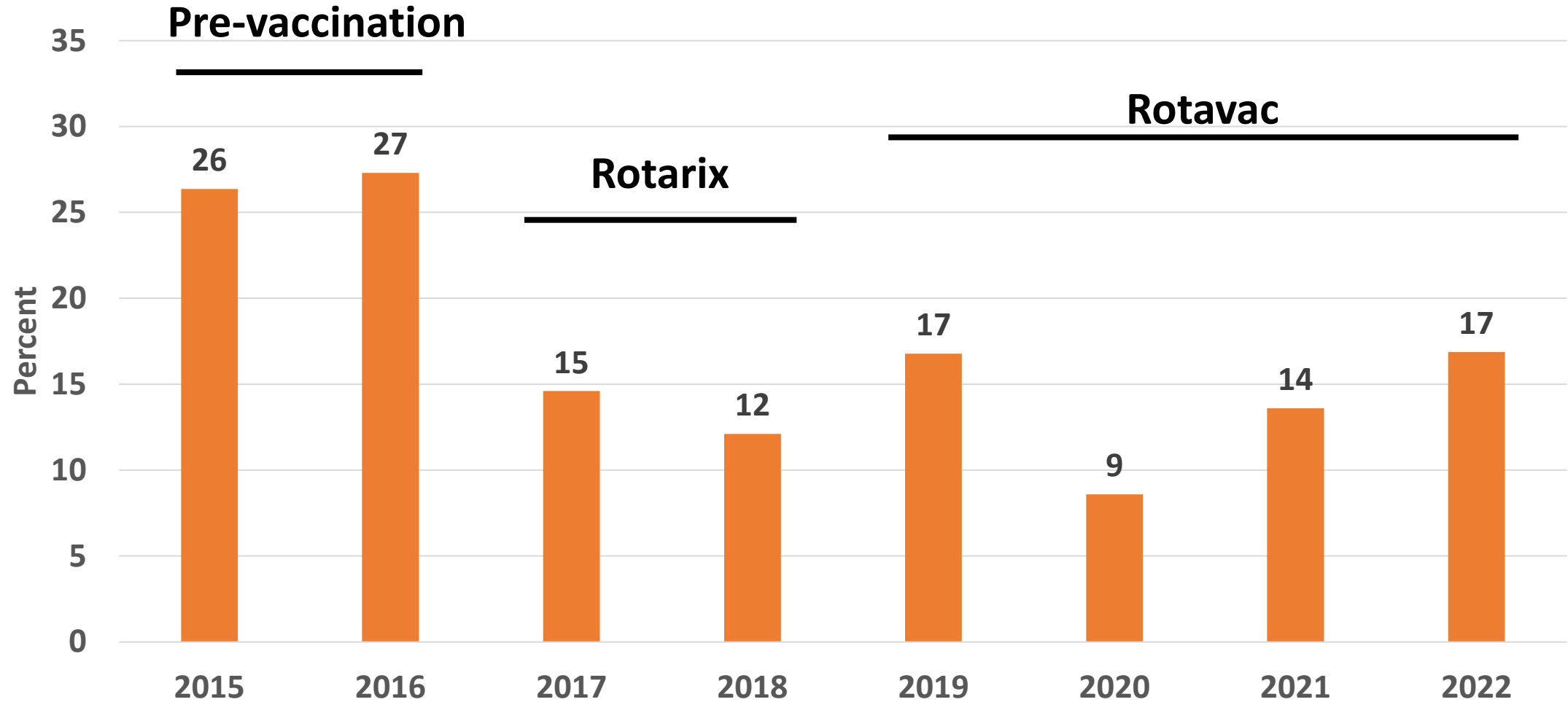
RV Cases Epidemiological Curve



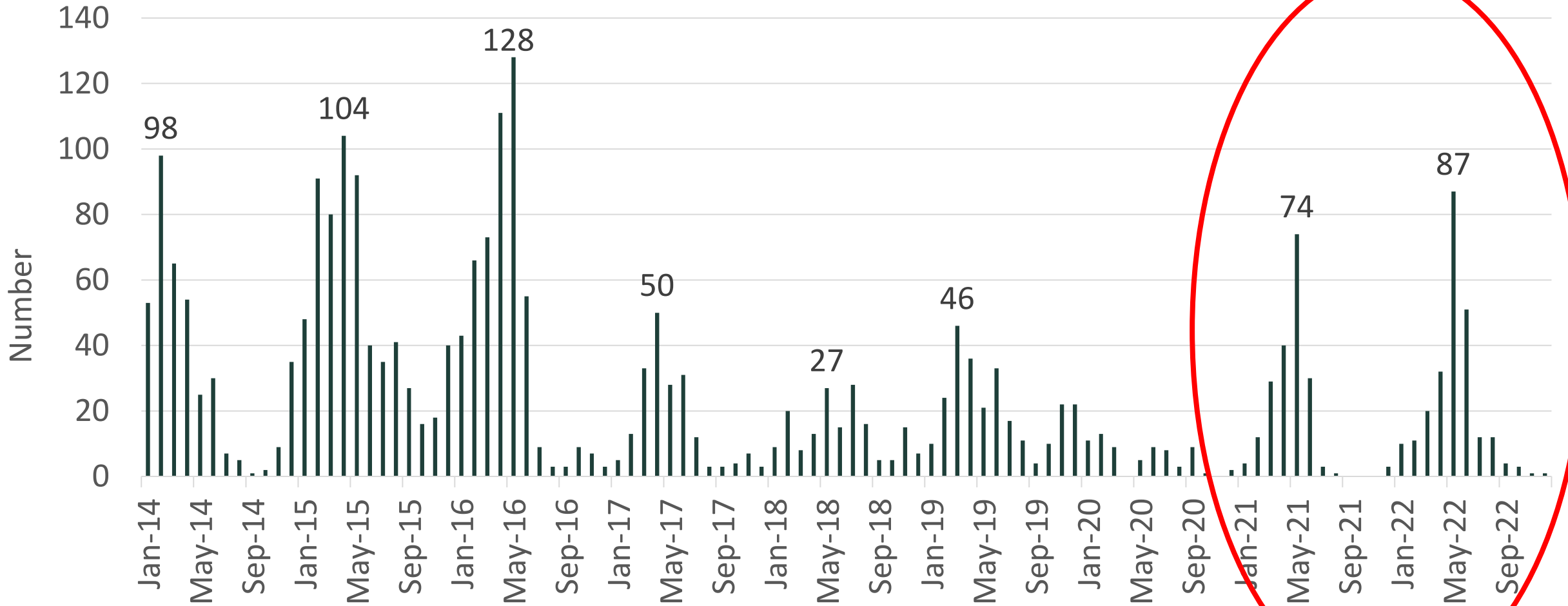
Distribution of Positive RV Patients by Age Group



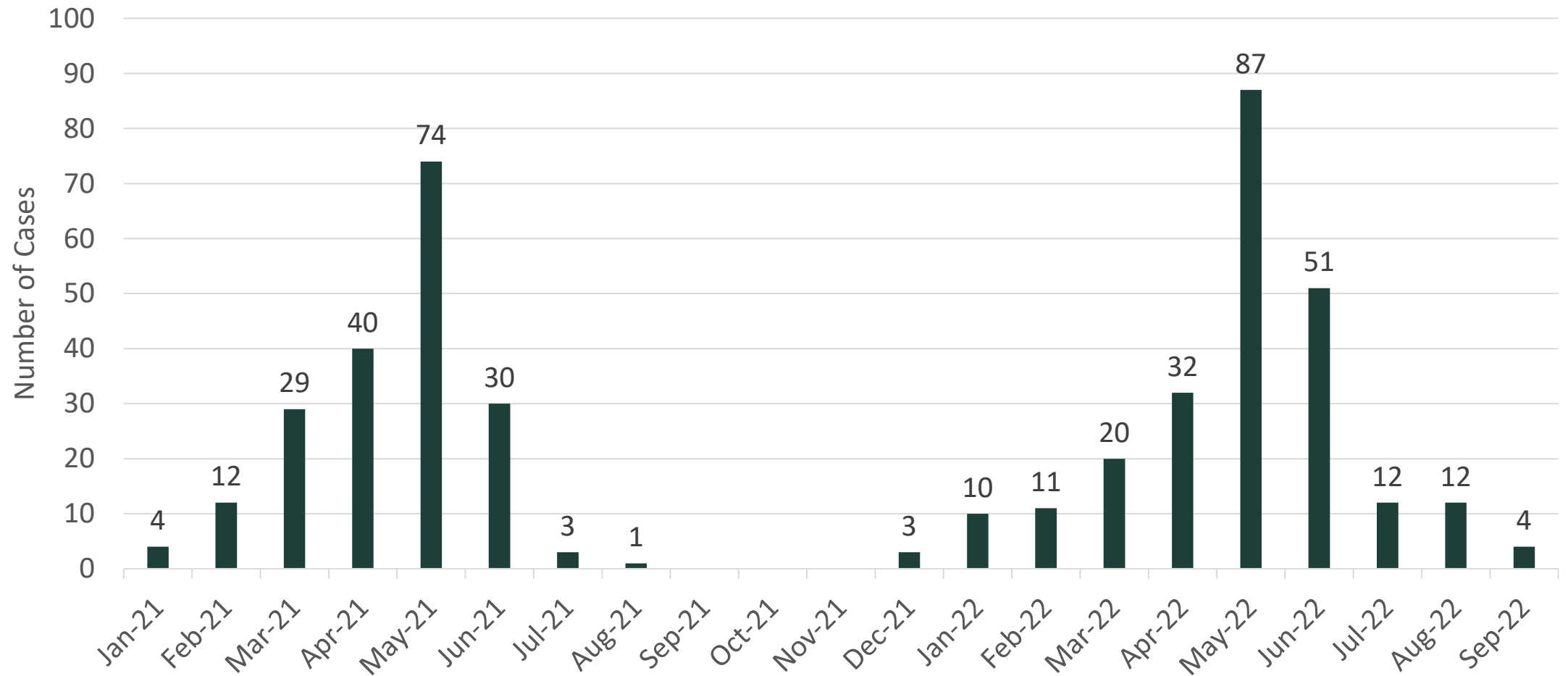
RV activity among patients with Gastroenteritis



RV Cases Epidemiological Curve



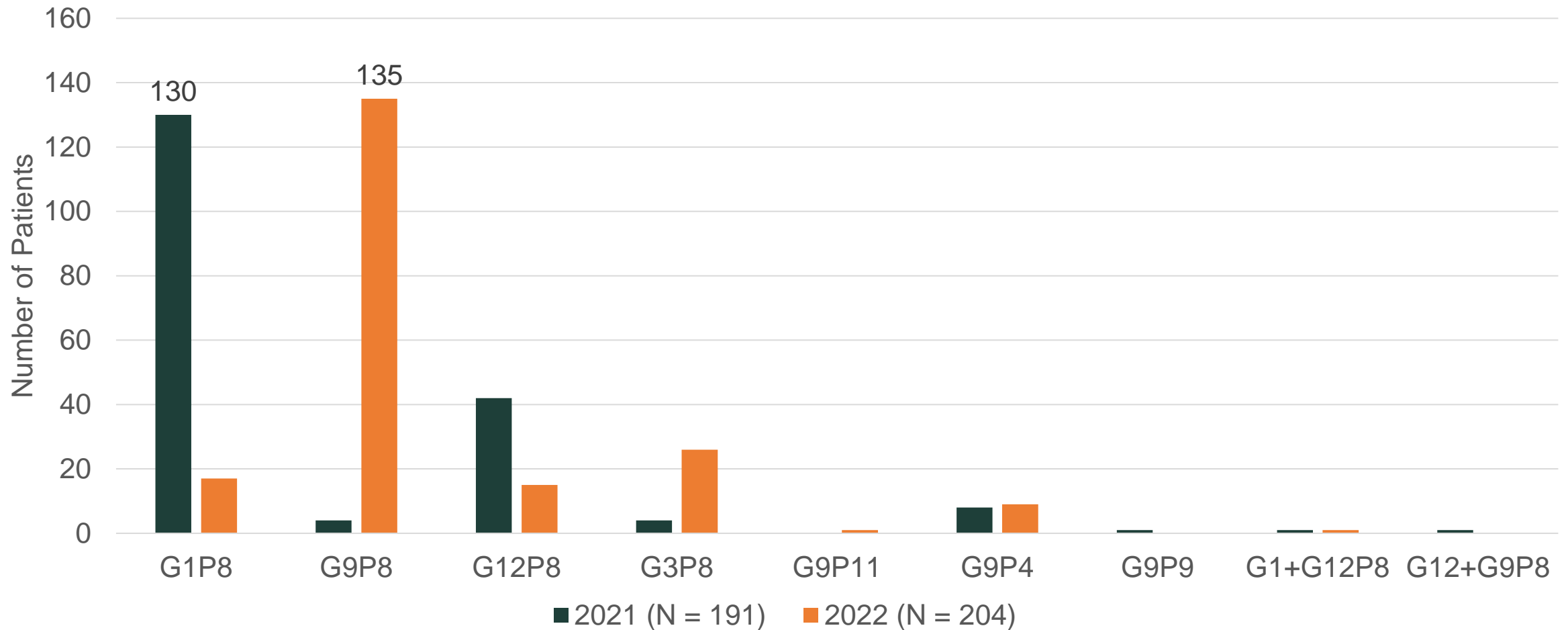
Investigating RV activity in 2021-2022



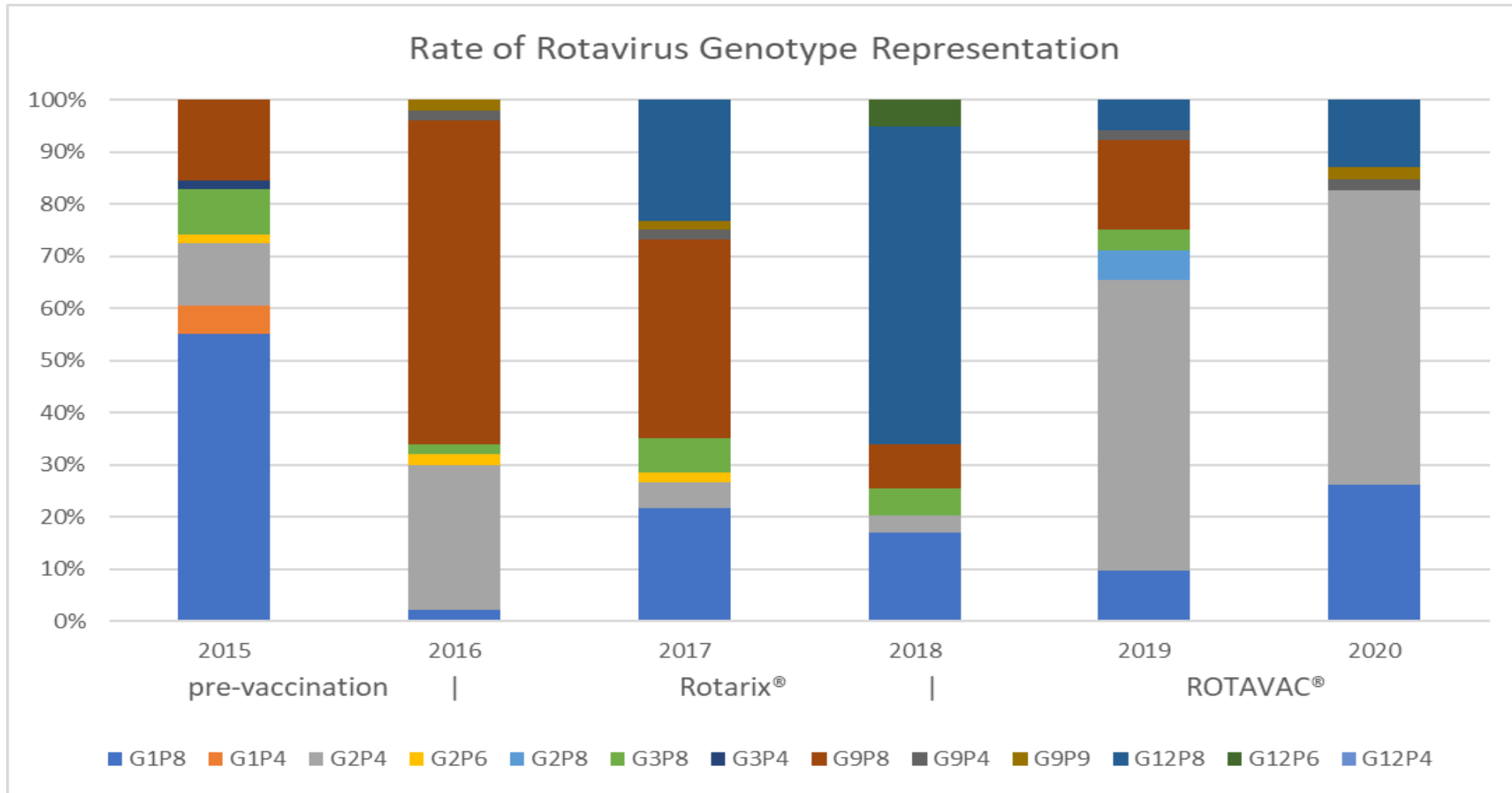
In-depth Analysis of 2021-2022

- RV genotypes
- RV patients vaccination status
- RV administered vaccine doses
- Patients clinical presentation

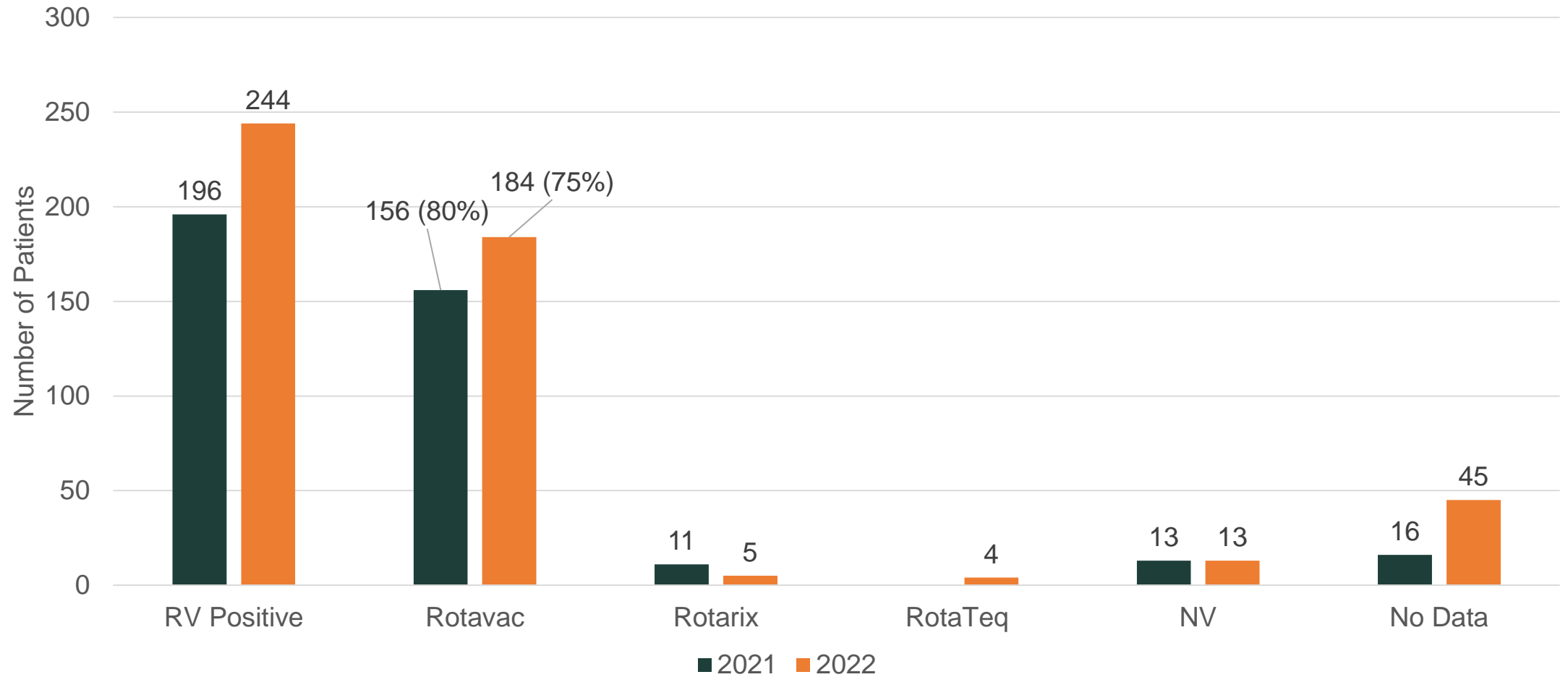
Distribution of RV genotypes in 2021-2022



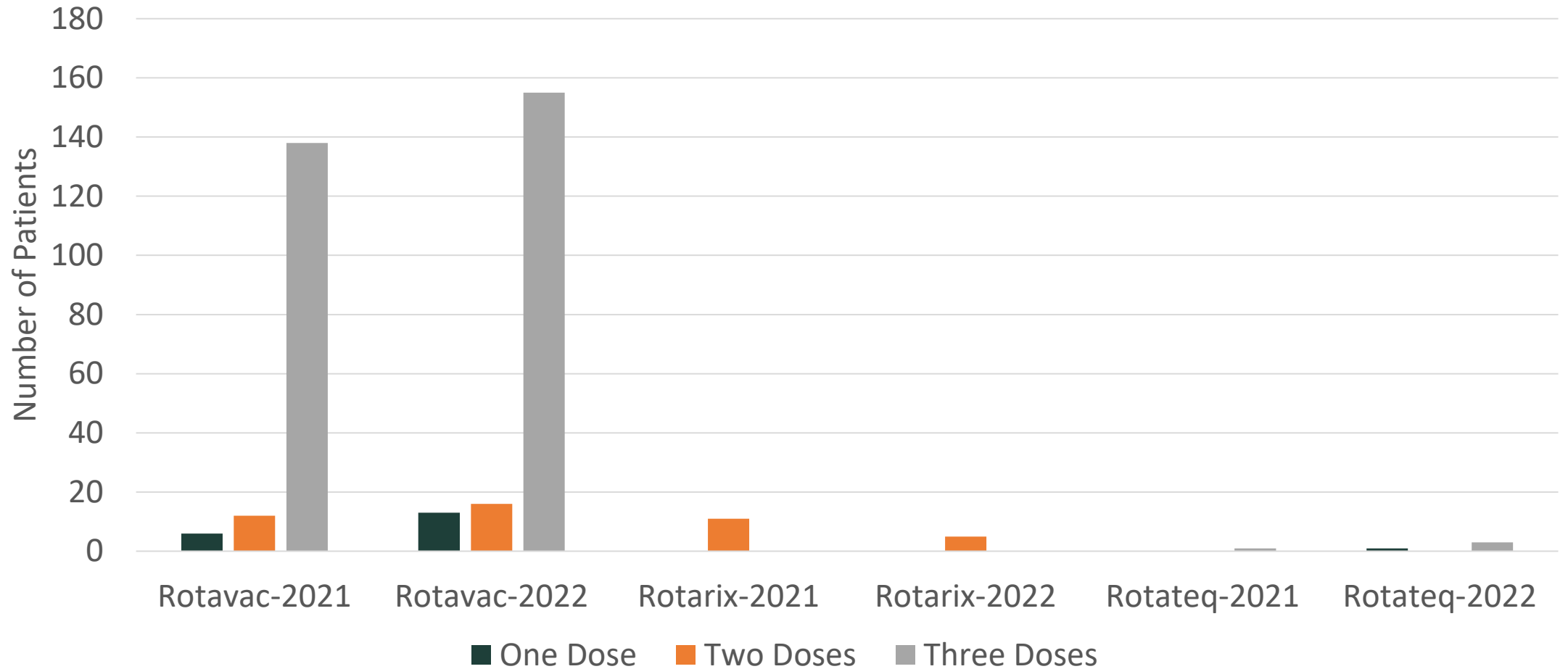
Distribution of RV genotypes 2015-2020



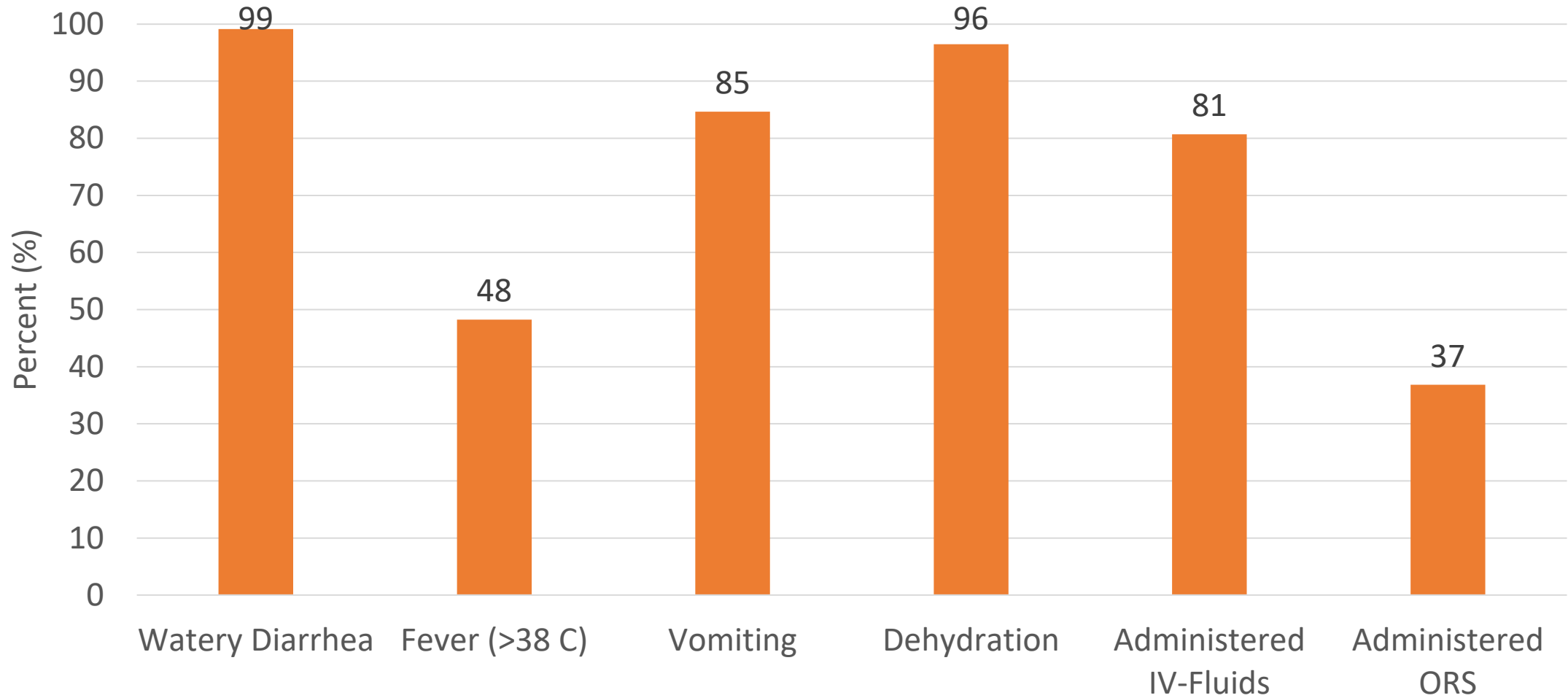
Patients RV Vaccination Status



RV Infected Patients Administered Vaccine Doses



Clinical Presentation of RV Infected & Hospitalized Patients



Summary

- Implementation of RV vaccines reduced the number of RV cases
- No statistical significance ($p < 0.05$) between the reduction of RV cases in the Rotarix vs the Rotavac vaccination periods
- RV activity in 2021/2022 was noted in the spring with sharp increase in number of cases accounting for about 30% of the gastroenteritis cases
 - The yearly RV positivity rate during the RV ranged between 14-17%
 - Three doses vaccinated patients needed hospitalization and medical intervention.
 - While annual case numbers have remained stable in 2021 and 2022, a so far unexplained clustering of cases was observed during the spring which invites further study

Topics for further analysis

- Accentuation rather than diminishing of seasonal RV disease fluctuation in immunized children
- Variation in genotype patterns in response to vaccine switch
- Influence of Covid epidemic on herd immunity through community behavior changes and vaccination gaps
- Influence of other gastrointestinal pathogens
- Continuation of epidemiological and microbiological data for another 2 years is recommended

Thank you