# Early Estimates of the Public Health Impact of Norovirus Vaccination on Severe Outcomes for Older Adults in Germany

## BACKGROUND

Norovirus is a common cause of acute gastroenteritis, an illness that can cause vomiting and diarrhea. Around the world, older adults, young children, and people with other health conditions may be most affected. In Germany, norovirus infections must be reported, but some cases may still be missed because not everyone is tested. No vaccine is currently available for adults to protect against norovirus, although vaccines are being developed.

## OBJECTIVE

The goal of this study was to estimate the potential public health effect of norovirus vaccination in adults aged 60 years and older in Germany, with a focus on severe health outcomes such as hospitalization and death.

## METHODS

Researchers created a model to compare vaccination with no vaccination in adults aged 60 years and older in Germany. The model covered a 1-year period and used a hypothetical vaccine scenario. The vaccine was assumed to be 65% effective in preventing norovirus gastroenteritis of any severity. The study population included 26,090,900 adults aged 60 years and older in Germany. The model estimated the numbers of community-acquired norovirus-related hospitalizations and norovirus-associated deaths with and without vaccination. It also estimated how many people would need to be vaccinated to prevent 1 hospitalization. The researchers also tested how results changed when they used higher estimates of disease incidence to account for underreporting.

## RESULTS

The preliminary model showed that if 50% of adults aged 60 years and older in Germany were vaccinated, about 1,400 to 6,220 community-acquired norovirus hospitalizations could be prevented each year. The model estimated that between 4,194 and 18,639 people would need to be vaccinated to prevent 1 hospitalization. The model also estimated that 8 to 92 norovirus-associated deaths could be prevented each year. Overall, the study suggests that norovirus vaccination could reduce severe illness in older adults in Germany.

## CONCLUSIONS

Norovirus vaccination may provide an important public health benefit for older adults in Germany. However, the researchers noted that these estimates are uncertain because up-to-date disease data are limited. They suggested that future estimates could be improved by using better current surveillance data, national claims data, indirect estimation methods, and data from vaccine clinical trials.

## References


1. Article 7 paragraph 1 (§ 7 Abs. 1) of the Infection Protection Act (Infektionsschutzgesetz - IfSG). https://www.gesetze-im-internet.de/ifsg/__7.html Date accessed 20.10.2025 Abfrage der Meldedaten nach dem Infektionsschutzgesetz (IfSG).
2. Hofmann FM, Olawumi E, Michaelis M, Hofmann F, Stößel U. Challenges in infection epidemiology: on the underreporting of norovirus gastroenteritis cases in Germany. *Int J Environ Res Public Health* 2020 Jan 2;17(1):314 doi: 10.3390/ijerph17010314
3. Bernard H, Höhne M, Niendorf S, Altmann D, Stark K. Epidemiology of norovirus gastroenteritis in Germany 2001–2009: eight seasons of routine surveillance. *Epidemiol Infect.* 2014 Jan;142(1):63-74. doi: 10.1017/S0950268813000435
4. Kowalzik F, Binder H, Zöller D, Riera-Montes M, Clemens R, Verstraeten T, Zepp F. Norovirus gastroenteritis among hospitalized patients, Germany, 2007–2012. *Emerg Infect Dis.* 2018 Nov;24(11):2021-28. doi: 10.3201/eid2411.170820
5. Robert Koch-Institut SurvStat@RKI 2.0, https://survstat.rki.de Date accessed 20.10.2025. Abfrage der Meldedaten nach dem Infektionsschutzgesetz (IfSG).


## Acknowledgments and Disclosures


Source presentation: Early Estimates of the Public Health Impact of Norovirus Vaccination on Severe Outcomes for Older Adults in Germany.

Presented at ESCMID Global: Congress of the European Society of Clinical Microbiology and Infectious Diseases; April 17-21, 2026; Munich, Germany.



Brandon J. Patterson, PharmD, PhD[1]*, Ashley E. Davis, PhD[2]; Stefan Scholz, PhD[3]; Anita J. Brogan, PhD[2+]; Katherine B. Carlson, PhD, MPH[1]; Ben Lopman, PhD[4]; Philip O. Buck, PhD, MPH[1+]

[1] Moderna, Inc., Cambridge, MA, USA; [2] RTI Health Solutions, Durham, NC, USA; [3] Moderna Germany GmbH., Munich, Germany, [4] Epidemiologic Research & Methods, LLC, USA
* Presenting author; + formerly employed at listed company during time of study



BP, SS, KC, and PB are employees of Moderna, Inc. and hold stock/stock options in the company. AE and AB are/were employees of RTI-HS and received funding for execution of the analysis.

AI (ChatGPT) was used to support development of this plain language summary.

### Who funded this study?

Moderna, Inc.
325 Binney Street
Cambridge, MA 02142, MA