

# HOSPITALIZATION COSTS OF COMMON GRADE 3/4 ADVERSE EVENTS ASSOCIATED WITH ONCOLOGY TREATMENTS IN THE UNITED STATES

Christopher N. Graham, MS; Amanda W. Erbe, MSc  
RTI Health Solutions, Research Triangle Park, NC, United States

**OBJECTIVE**  
Estimate costs and LOS of common grade 3/4 AEs from 2023-2024 FDA-approved oncology treatment using NIS data and mapped ICD-10 codes

**METHODS**  
Grade 3/4 AEs from all 2023 and 2024 (1 June 2024) FDA-approved novel oncology therapies were identified from PI and mapped to ICD-10 codes

Means and standard errors were reported for weighted hospitalization costs and LOS calculated using R for each code from the 2021 NIS dataset

Hospitalization cost and LOS data from all US payers are available in the NIS

**16** novel oncology therapies were approved by the FDA in 2023 and 2024\*

Pirtobrutinib	1/27/23
Elacestrant	1/27/23
Retifanlimab-diwr	3/22/23
Epcoritamab-bysp	5/19/23
Glofitamab-gxbm	6/15/23
Quizartinib	7/20/23
Talquetamab-tgvs	8/9/23
Elranatamab-bcmm	8/14/23
Toripalimab-tpzi	10/27/23
Fruquintinib	11/8/23
Repotrectinib	11/15/23
Capivasertib	11/16/23
Tislelizumab-jsgr	3/13/24
Nogapendekin alfa inbakicept-pmln	4/22/24
Tovorafenib	4/23/24
Tarlatamab-dlle	5/16/24

Mean costs and LOS across the 35 AEs were **\$10,317** and **3.42 days**, respectively

**35** grade 3/4 AEs were reported in  $\geq 4$  of the 16 PIs<sup>a</sup>

## CONCLUSION

- Many oncology treatment-related AEs are common across recently approved therapies
- Reports of costs and LOS may be useful for parameterizing future economic models
- Costs and LOS information should be updated as new oncology therapies are approved

## REFERENCES

1. US DHHS. 2017 November 27. [https://ctep.cancer.gov/protocoldevelopment/electronic\\_applications/docs/ctcae\\_v5\\_quick\\_reference\\_5x7.pdf](https://ctep.cancer.gov/protocoldevelopment/electronic_applications/docs/ctcae_v5_quick_reference_5x7.pdf).  
2. HCUP NIS. 2021. [www.hcup-us.ahrq.gov/nisoverview.jsp](http://www.hcup-us.ahrq.gov/nisoverview.jsp).

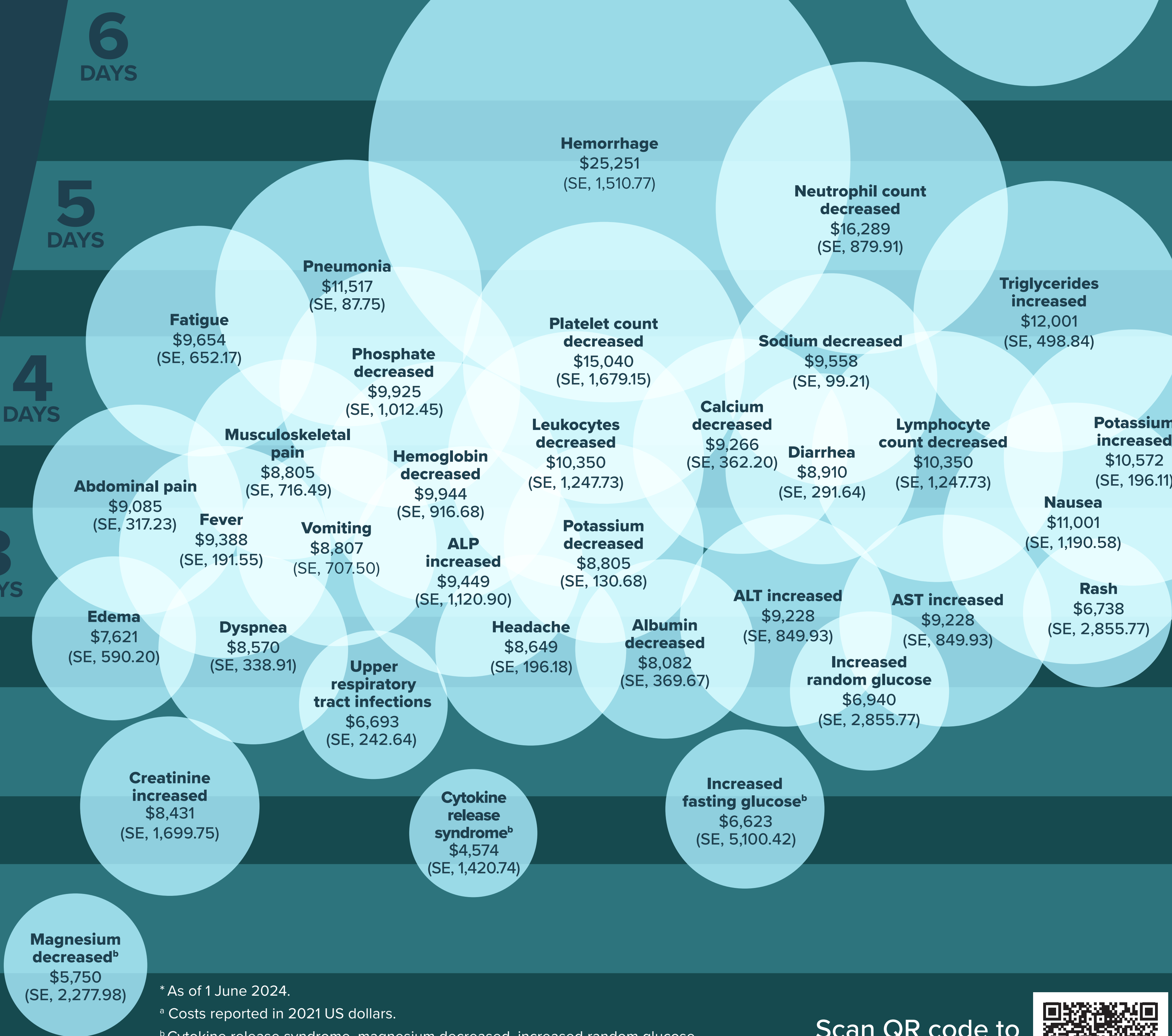
## ABBREVIATIONS

AE = adverse event; ALP = alkaline phosphatase; ALT = alanine transaminase; AST = aspartate transaminase; FDA = Food and Drug Administration; HCUP = Healthcare Cost and Utilization Project; ICD-10 = International Classification of Diseases, Tenth Revision; LOS = length of stay; NIS = National Inpatient Sample; PI = prescribing information; US = United States.



Grade 3/4 AEs are common in cancer treatment and expensive to manage

- Cost-effectiveness models often source grade 3/4 AE costs from HCUPnet, a public tool of the NIS
- Access to hospitalization costs and LOS has recently been restricted to broader diagnosis code, impacting economic model parameterization and precision



<sup>a</sup> As of 1 June 2024.

<sup>b</sup> Costs reported in 2021 US dollars.

<sup>c</sup> Cytokine release syndrome, magnesium decreased, increased random glucose, and increased fasting glucose are based on a small sample size (n = 2 for cytokine release syndrome and n = 3 for the others); therefore, cost estimates are not considered reliable. Additionally, LOS estimates are not considered reliable for magnesium decreased.

Scan QR code to view full version of manuscript

