

Healthcare resource use for pediatric low-grade glioma care: a cohort of linked electronic health records and claims data

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Background

- Pediatric low-grade glioma (pLGG) is the most common brain tumor in children, accounting for approximately 30% of all central nervous system tumors¹
- Despite the indolent nature of low-grade lesions and high long-term survival, pLGG is associated with persistent long-term tumor- and treatment-related morbidities²⁻⁵

Objective

- We conducted a retrospective study of linked claims and electronic health records (EHRs) to characterize the costs associated with the treatment of pLGG

Methods

- A retrospective study was performed using the Optum[®] de-identified Market Clarity Dataset linked claims (commercial, Medicare advantage and Managed Medicaid beneficiaries) and EHRs of cases ≤18 years of age, with an ICD-10 code for brain neoplasm and ≥1 physician notes between January 01, 2017 and June 30, 2018 (**Figure 1**)
- The index date was first claim or EHR with an ICD-10 code for brain neoplasm
- pLGG-relevant data from physician notes was identified using natural language processing
- The observation period included 3 months prior to index date (pre-index) and 6-month segments from index date for 36 months (post-index)
- Cases had either continuous EHR activity or continuous insurance coverage in this period
- Results for procedures and medication use were reported as averages throughout the 36-month post-index follow-up period

Results

- Of 2841 patients assessed for eligibility, a total of 154 patients with pLGG were identified (**Figure 1**)
- Median age was 11 years, 49% of patients were female, 75% were non-Hispanic white, 13% Hispanic, 5% African American, 1% Asian and 6% other/unknown
- 56% had commercial benefits and 44% had Medicaid benefits
- Study results are reported with ranges over a three-year follow-up period (**Figures 2-6**)

Figure 1. Study design and profile

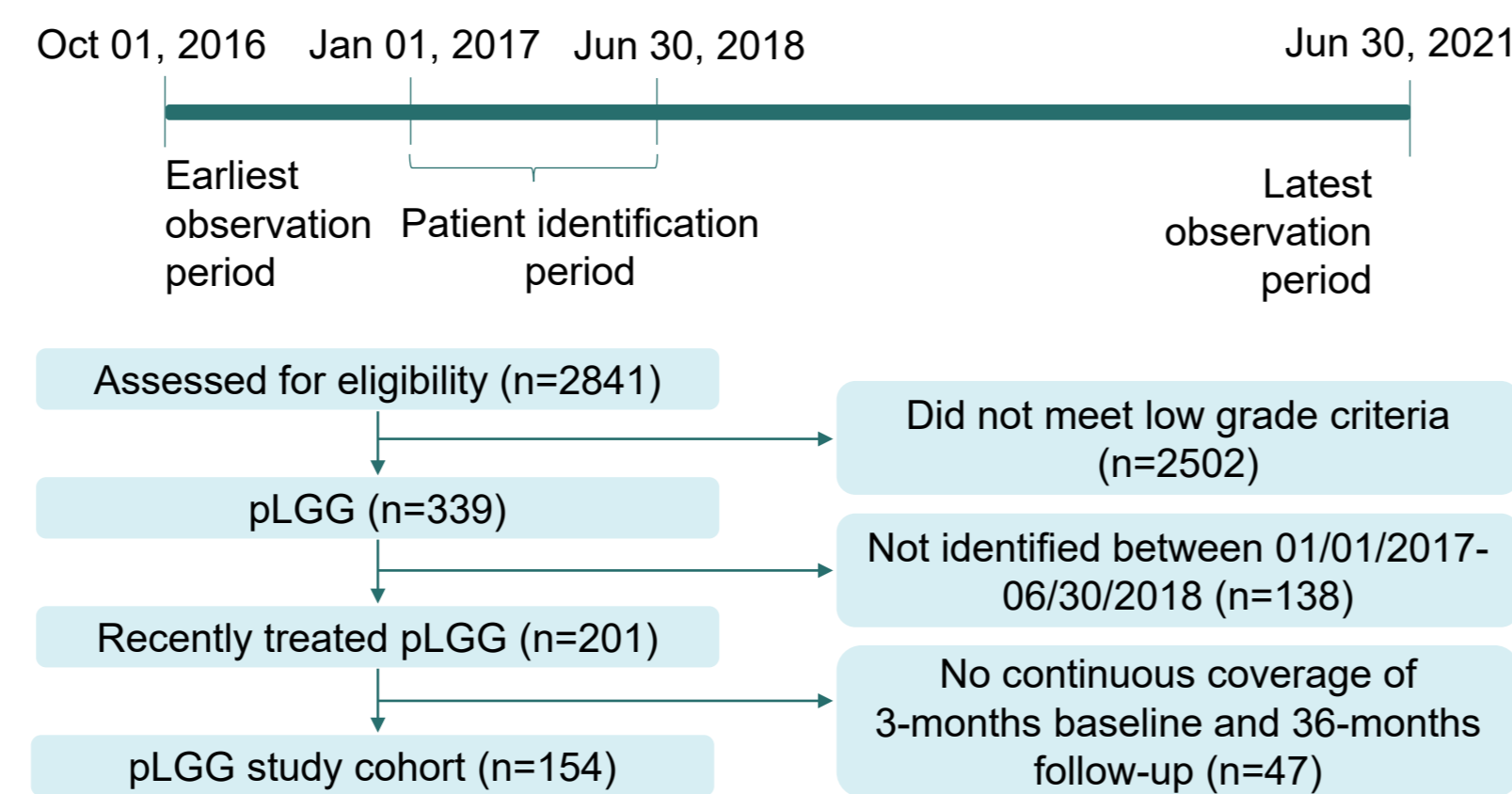
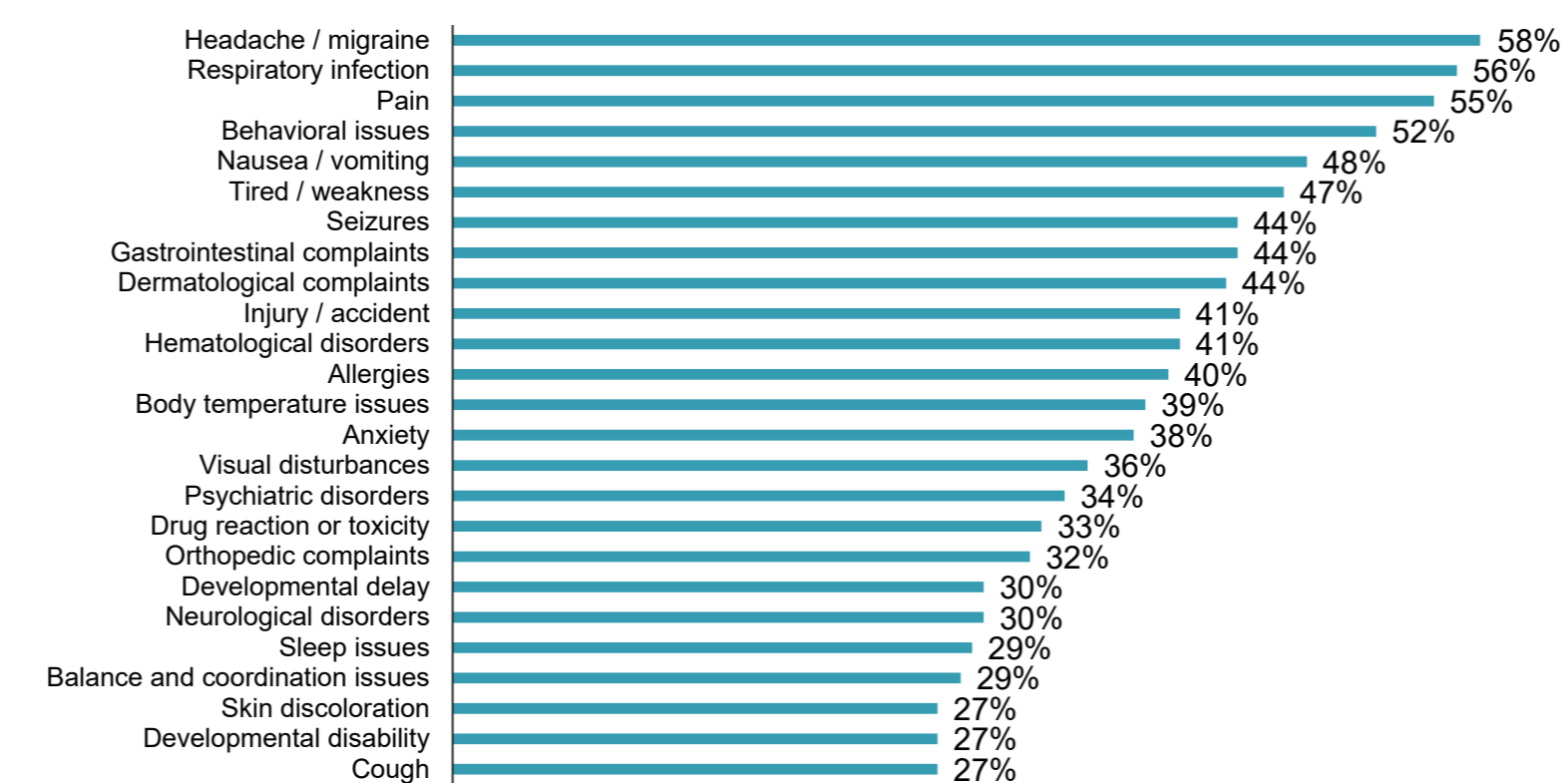


Figure 2. Reasons for healthcare utilization

A. Most common reasons for healthcare utilization in the overall study period (n=154)



B. Select reasons for healthcare utilization over time in 6-month intervals*

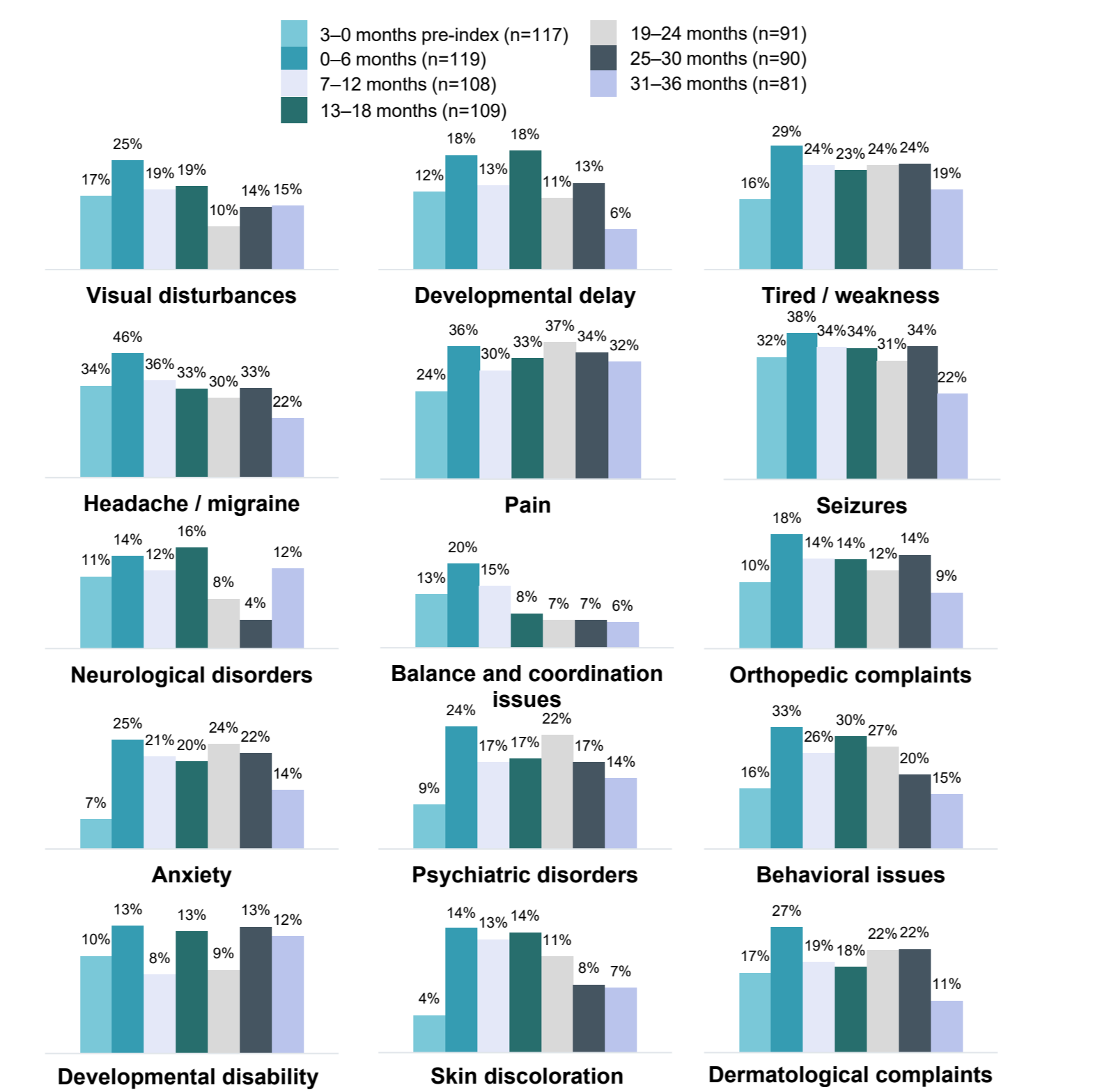
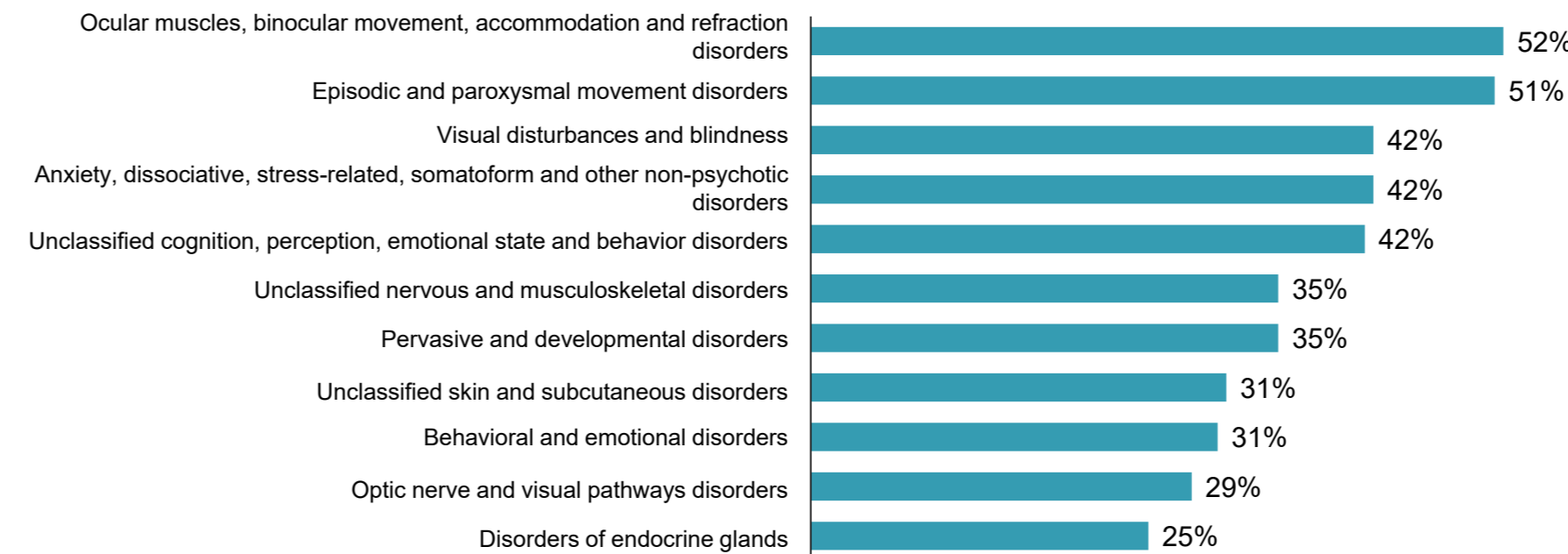


Figure 3. Coexisting conditions

A. Coexisting conditions in the overall study period (n=154)



B. Select coexisting conditions over time in 6-month intervals*

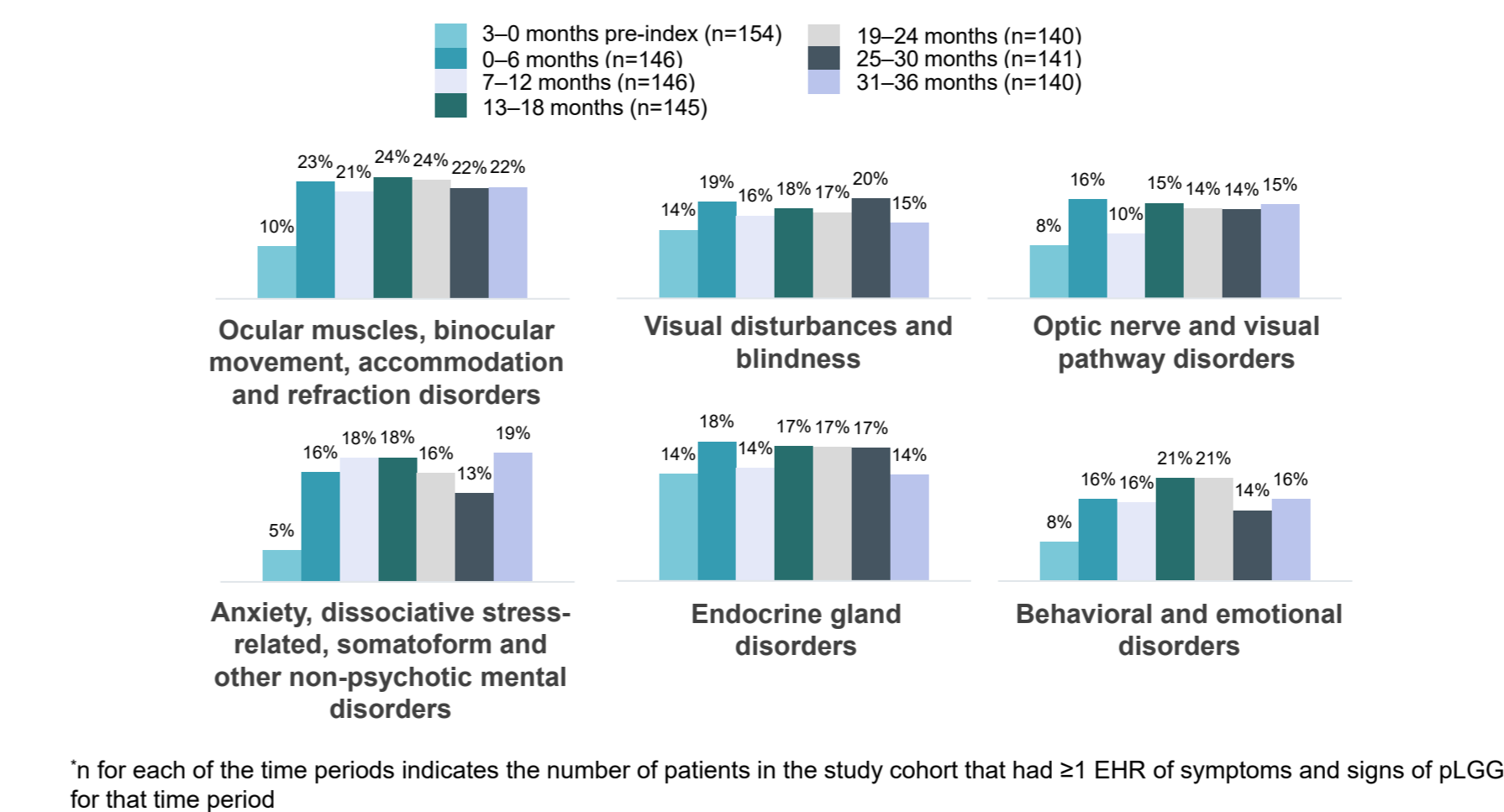
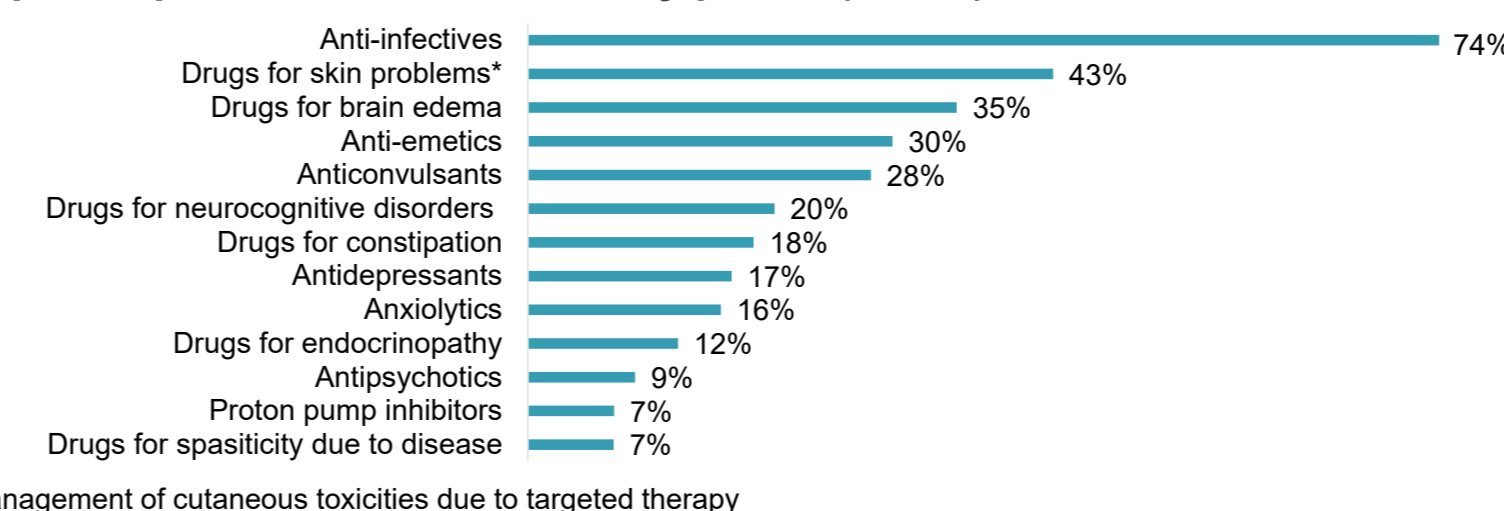


Figure 4. Filled prescriptions

A. Filled prescriptions in the overall study period (n=154)



B. Filled prescriptions over time: 6-month intervals*

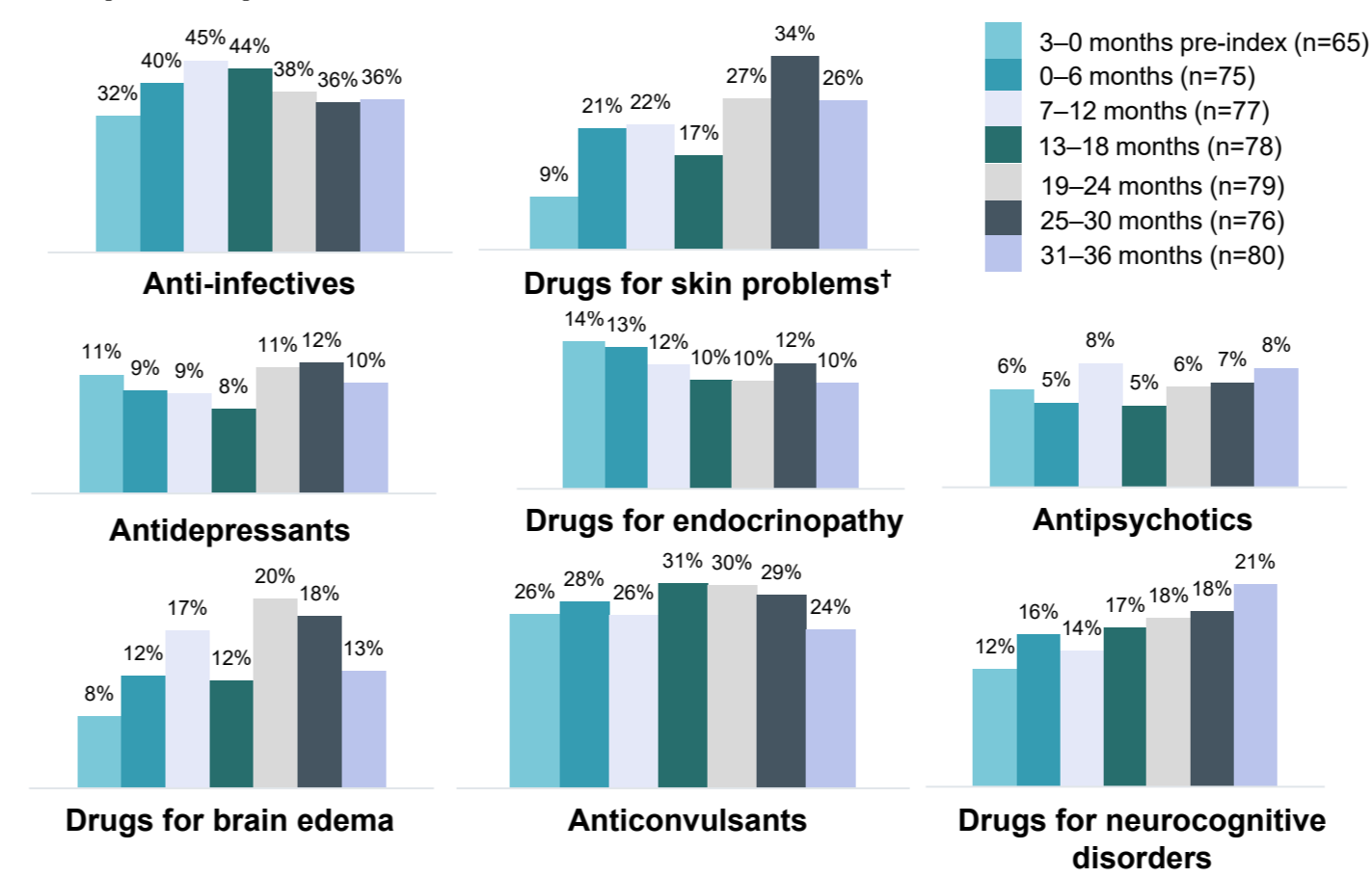


Figure 5. Administered medications: overall study period

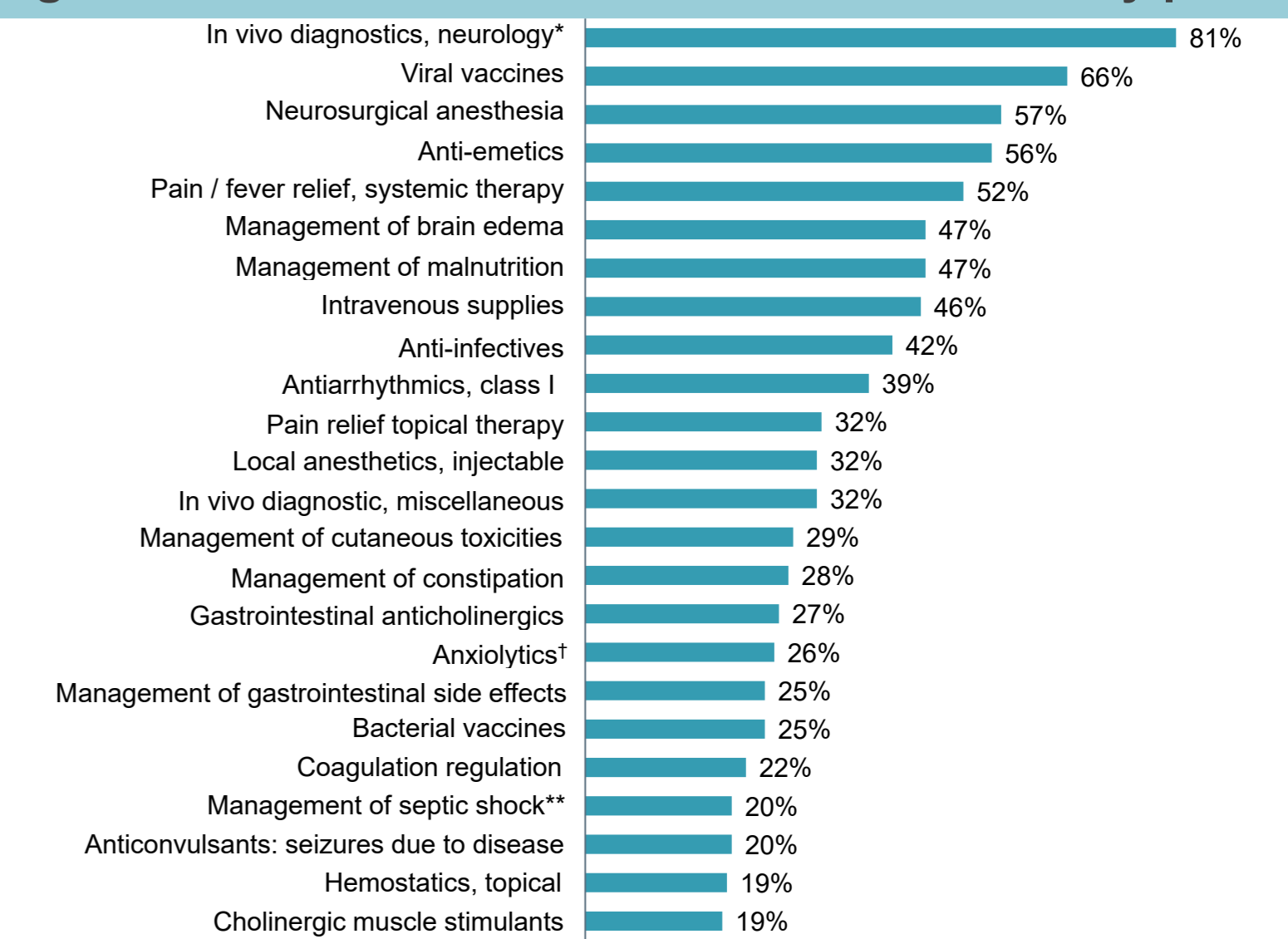
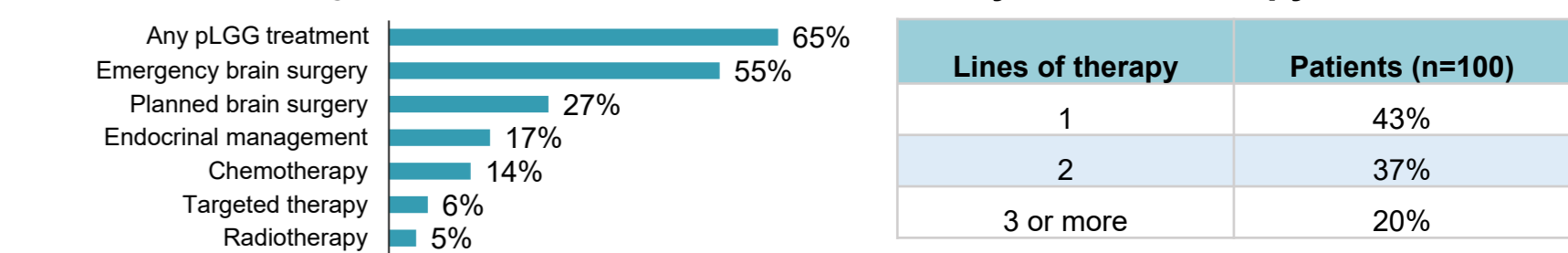


Figure 6. pLGG therapy

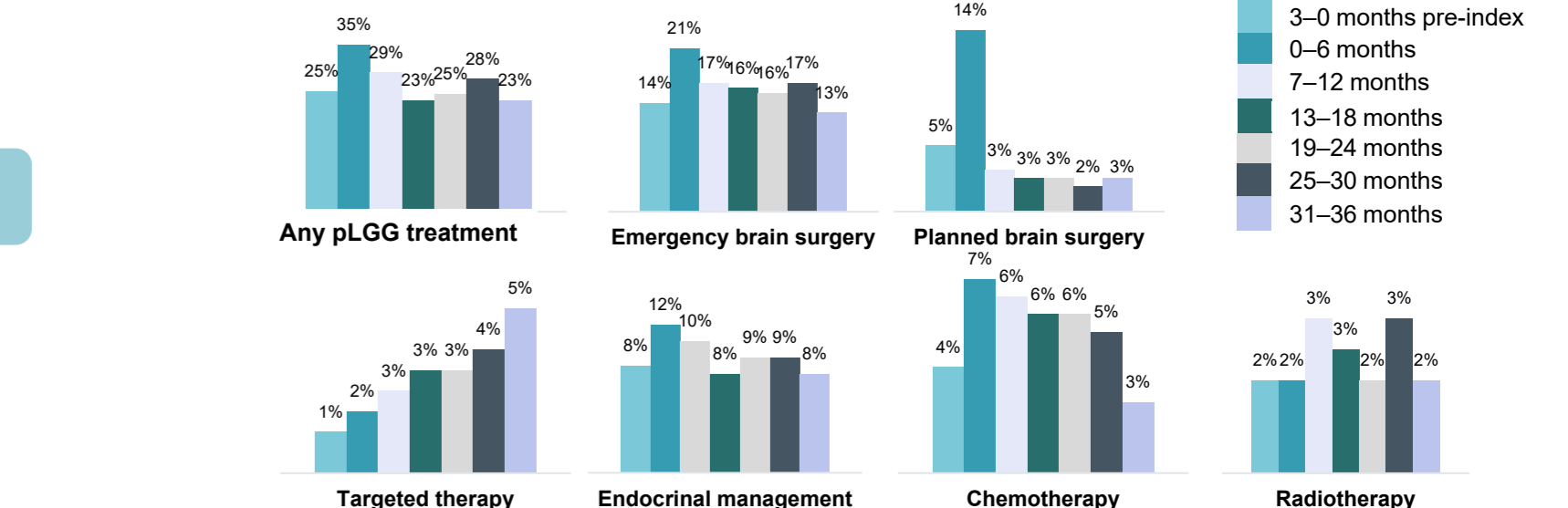
A. Overall study period



B. By lines of therapy

Lines of therapy	Patients (n=100)
1	43%
2	37%
3 or more	20%

C. Over time: 6-month intervals*



Conclusions

- Patients with pLGG often require long-term medical care and high levels of healthcare resources to treat their disease and its sequelae
- Most patients with pLGG who receive disease-specific treatment will relapse and face a higher burden of disease
- Further studies using integrated data sources are warranted to help understand the burden of pLGG and inform evidence-based health care planning for these patients

References

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Acknowledgments

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