

# Clinical and Economic Burden of Mantle Cell Lymphoma in the Veteran Health Administration Population

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# Background

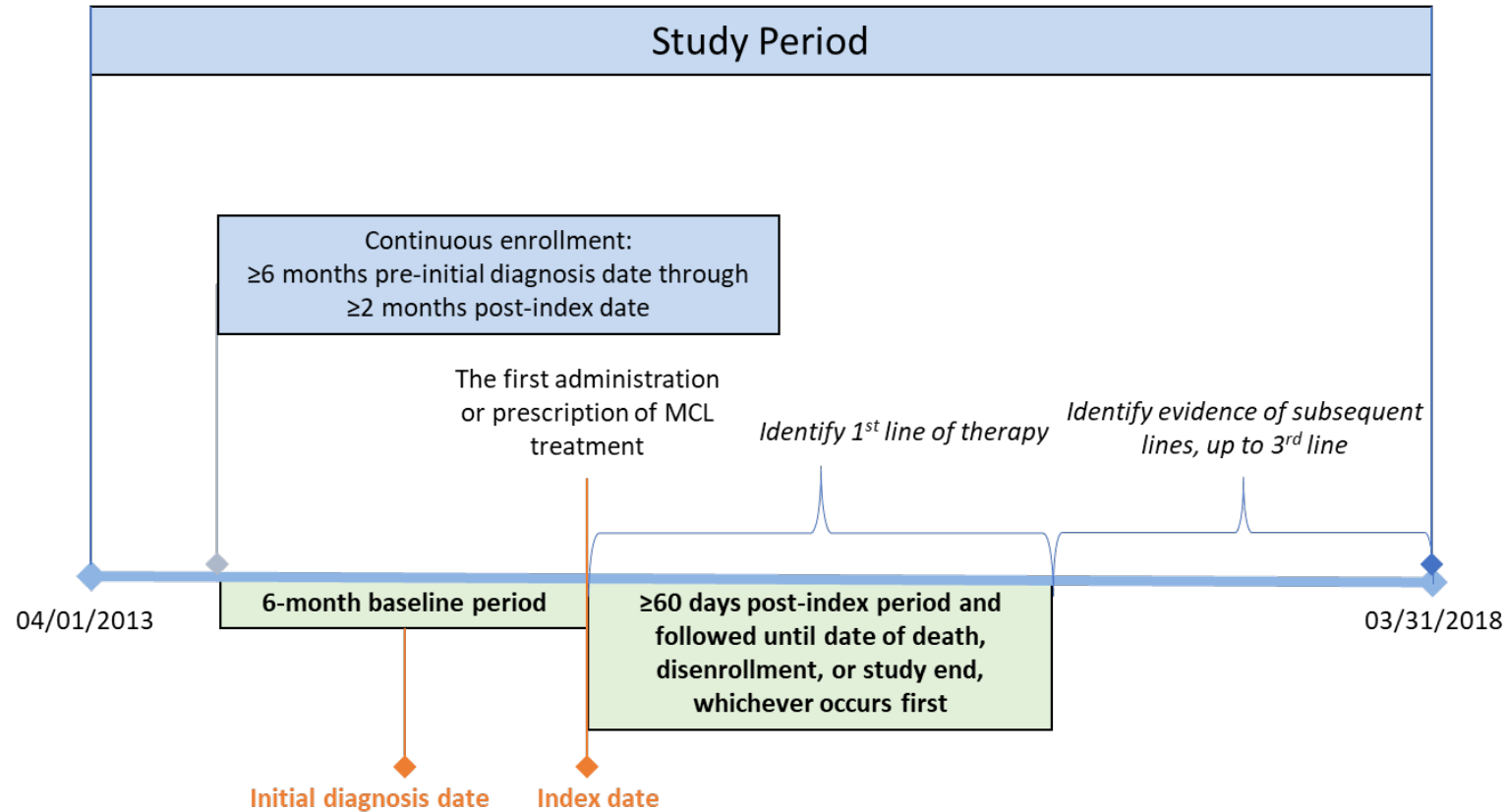
- Mantle cell lymphoma (MCL) is an incurable B-cell non-Hodgkin lymphoma
- There is limited data that quantifies the disease burden of MCL in US veteran patients

# Objectives

- This retrospective cohort analysis aims to examine the clinical burden, costs and healthcare resource utilization of MCL to veterans

# Methods – Study Design

- Data source: The Veterans Health Administration (VHA) database
- Study population: Adults who were newly diagnosed with MCL and initiated treatment in VHA dataset 2014-2018



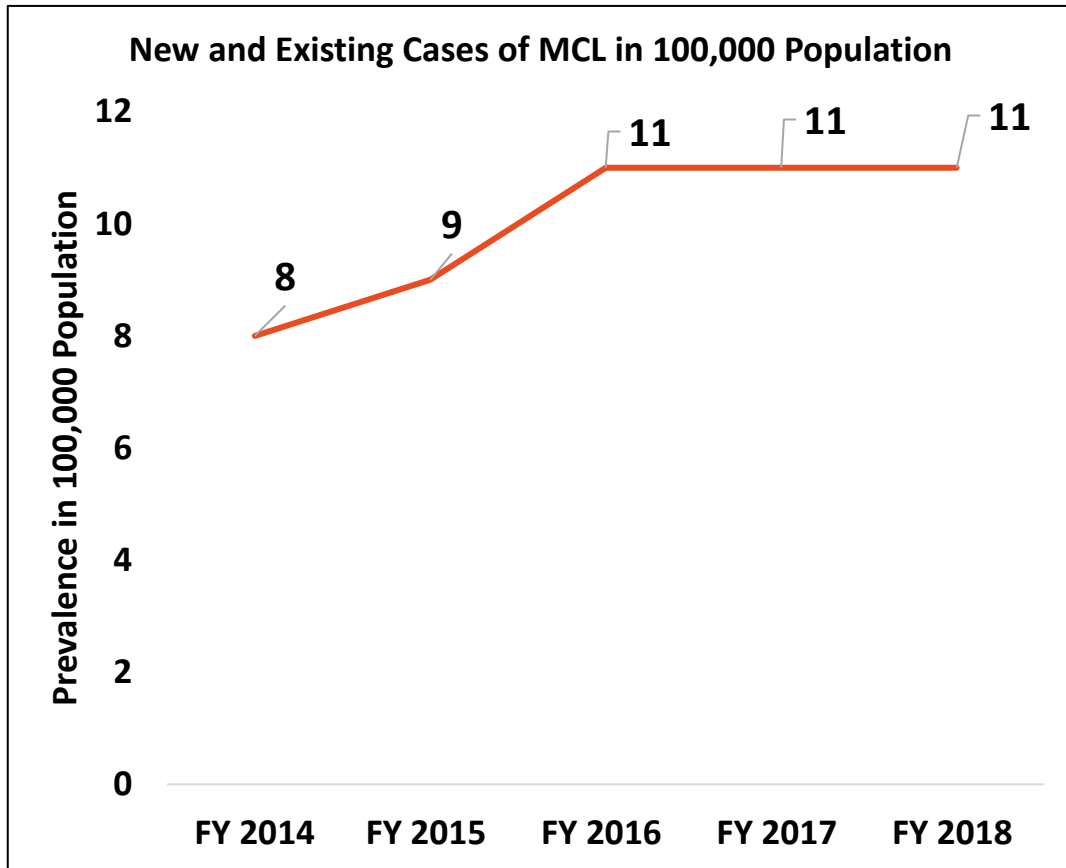
- Index date: initial MCL treatment date
- Patients were included if they had continuous enrollment for 6 months prior to and >60 days following the index date

# Methods – Treatment Regimen

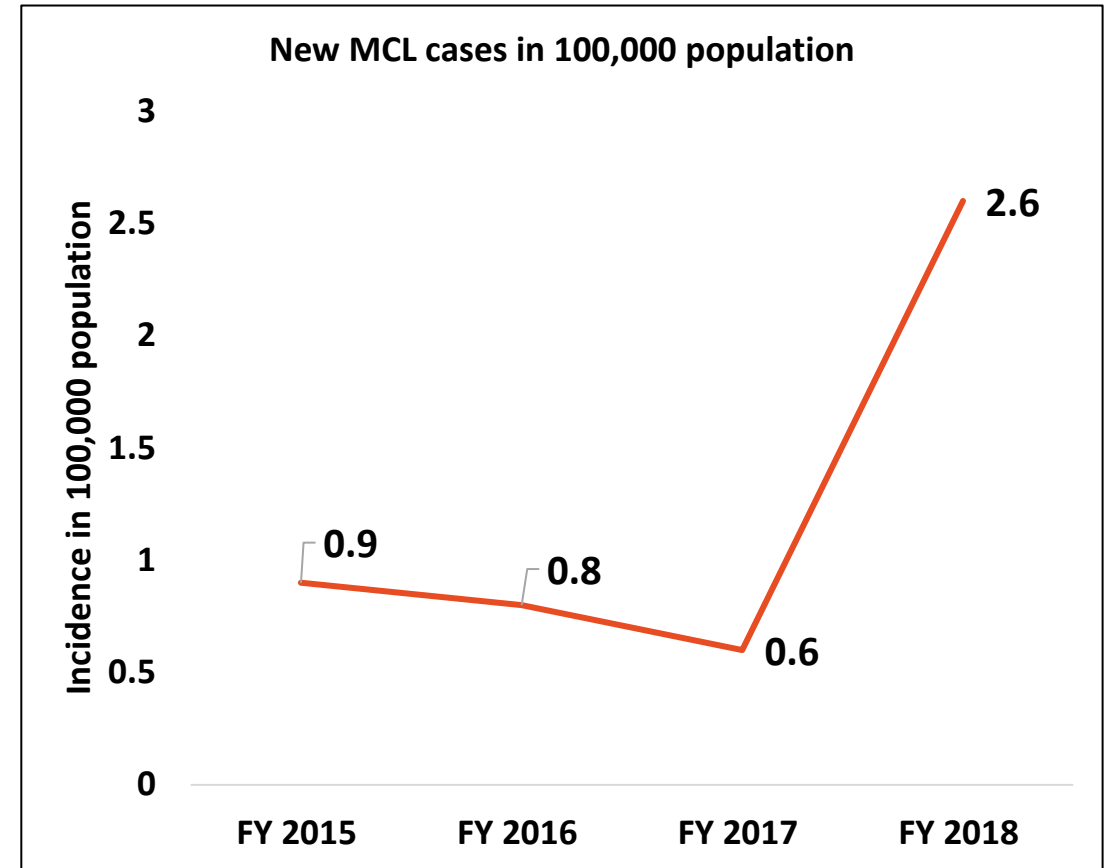
- **Treatment regimen:**
  - The combination of all agents used within the first 60 days of MCL treatment initiation
  - Mutually-exclusive and categorized as:
    - Bendamustine-based (*alone or in combination*)
    - Bruton's tyrosine kinase (BTK)-based inhibitors (*ibrutinib or acalabrutinib, alone or in combination*)
    - R-CHOP (*rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone*)
    - Rituximab monotherapy
    - Other regimens
- **Line of therapy:**
  - The start of a new line of therapy is defined as the addition of a new agent >60 days from previous line or as treatment restart following a >90-day therapy gap
  - Treatment regimens, costs, and hospitalizations were examined by 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> line of therapy
- **Treatment discontinuation:** no MCL treatment for 90 days from the last day of administration

# Results – MCL Epidemiology in VHA Population

- Prevalence: 8-11 cases per 100,000 persons
- Incidence: 0.6-2.6 cases per 100,000 persons



Prevalence of MCL in VHA by Fiscal Year (FY)



Incidence of MCL in VHA by Fiscal Year (FY)

# Results – Patient Characteristics

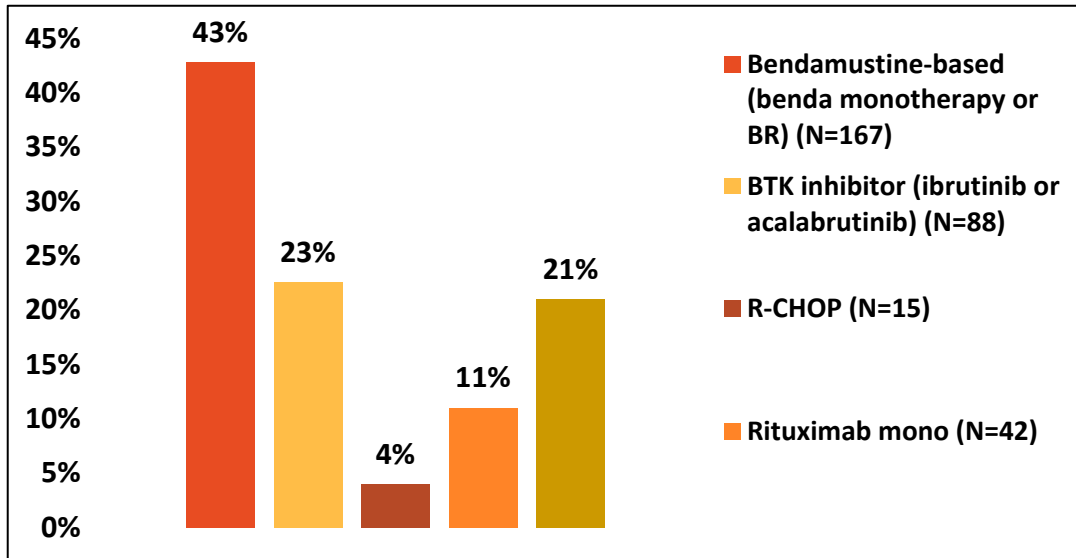
## Baseline Characteristics of MCL Patients in the VHA Population

|   | All MCL Patients (N=390) |        |
|---|--------------------------|--------|
|   | N                        | %      |
| <b>Age</b>                              |                          |        |
| Mean (SD)                               | 70.65 (9.10)             |        |
| 18-34                                   | 0                        | 0.00%  |
| 35-54                                   | 21                       | 5.38%  |
| 55-64                                   | 53                       | 13.59% |
| ≥65                                     | 316                      | 81.03% |
| <b>Sex</b>                              |                          |        |
| Male                                    | 389                      | 99.74% |
| Female                                  | 1                        | 0.26%  |
| <b>Race</b>                             |                          |        |
| White                                   | 333                      | 85.38% |
| African American                        | 22                       | 5.64%  |
| Hispanic                                | 24                       | 6.15%  |
| Other                                   | 11                       | 2.82%  |
| <b>Comorbidity</b>                      |                          |        |
| Any Cardiovascular Comorbidity          | 305                      | 78%    |
| Acute or Chronic Kidney Disease         | 60                       | 15%    |
| Diabetes                                | 114                      | 29%    |
| Charlson Comorbidity Index Score (Mean) | 1.40                     |        |

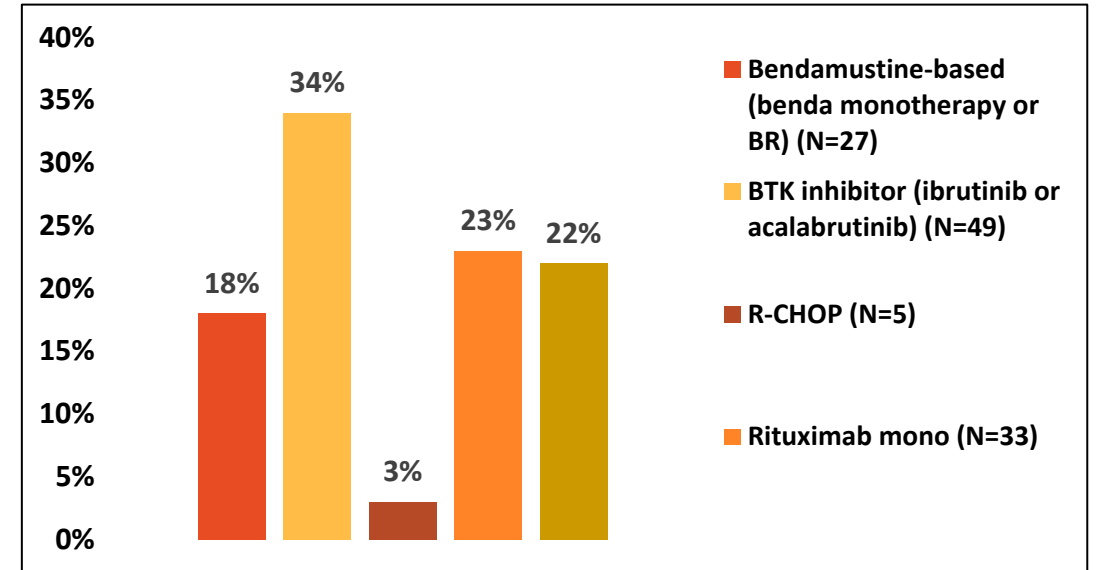
- Patients were a mean age of 70 years and 81% were aged ≥65 years
- The study population was nearly entirely male and 85% were white
- Majority (78%) of VHA patients have at least one of the following cardiovascular conditions: arterial thrombosis, atrial fibrillation, cardiac arrhythmia, cardiac valvular disease, cerebrovascular disease, hypertension, myocardial infarction/coronary artery disease, venous thrombosis, dyslipidemia and thrombocytopenia

# Results – Treatment Regimens

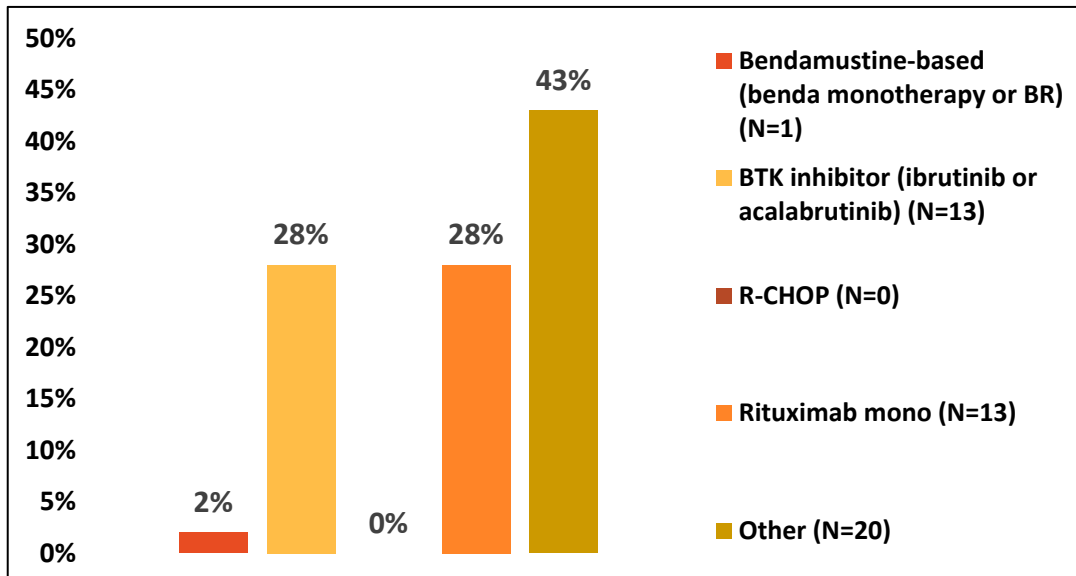
1<sup>st</sup>-line Therapies among All MCL Patients (N=390)



2<sup>nd</sup>-line Therapies among All MCL Patients (N=146)



3<sup>rd</sup>-line Therapies among All MCL Patients (N=47)

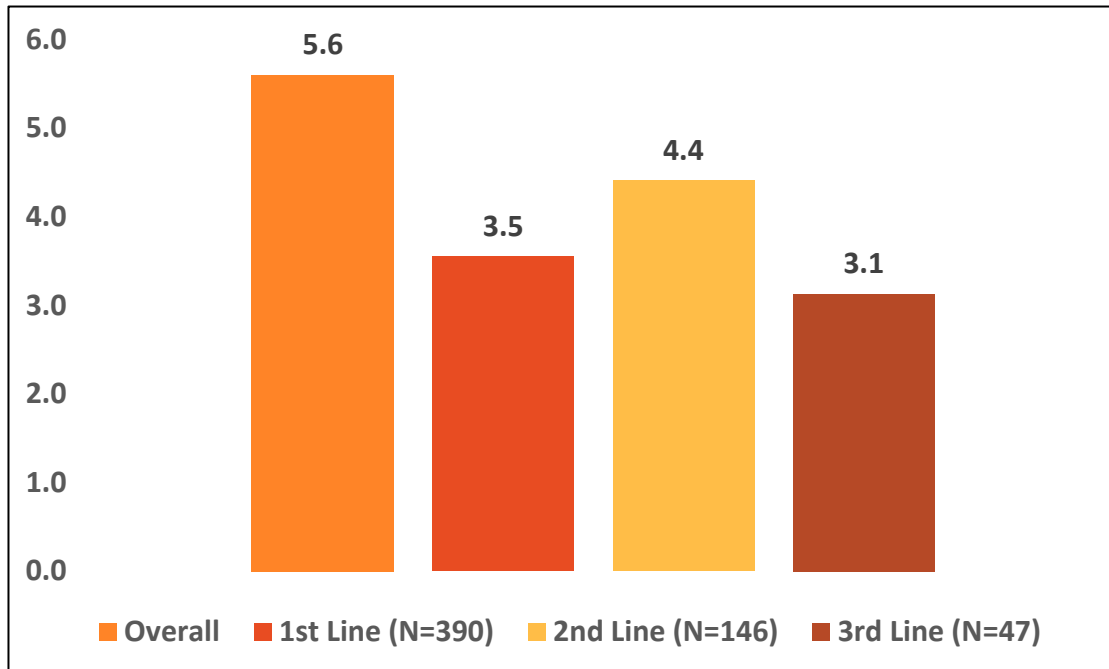


- A total of 390 patients received 1<sup>st</sup> line (mean duration: 243 days), 146 (37%) patients received 2<sup>nd</sup> line (mean duration: 259 days), and 47 (12%) received 3<sup>rd</sup> line (mean duration: 154 days) therapy
- The overall treatment discontinuation rate was 82%

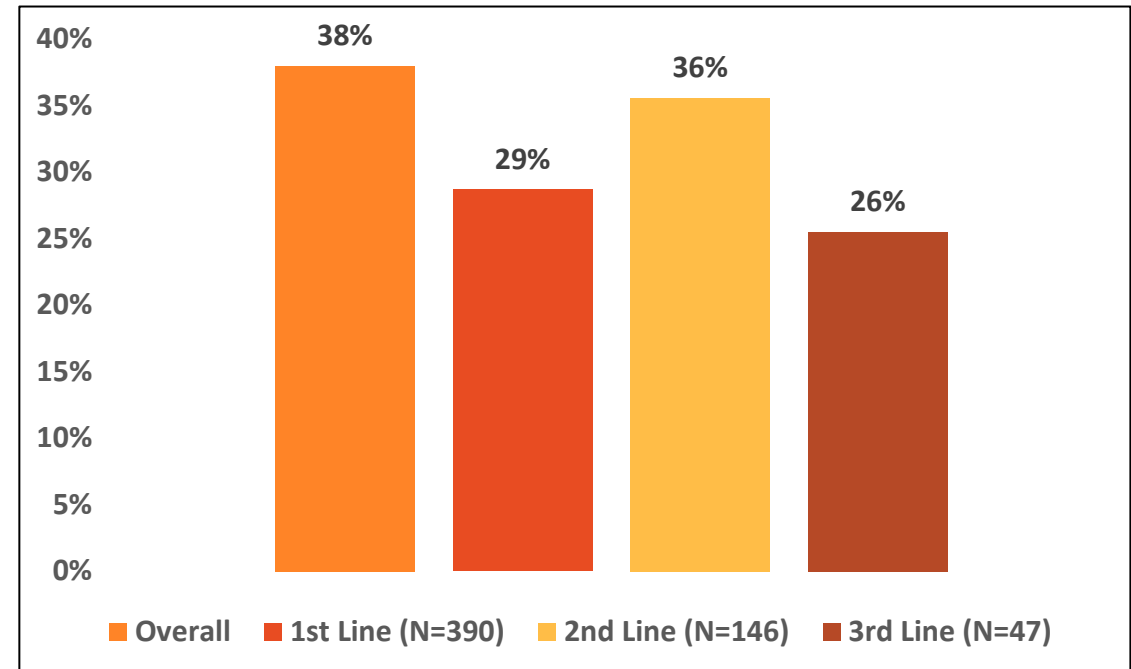
# Results – Hospitalization Rates associated with MCL

- Approximately 38% of MCL patients had at least one all-cause hospitalization
- Mean length of stay (LOS) was 5.6 days

Mean LOS (Days) among all MCL Patients (N=390)



Hospitalization Rates among all MCL Patients (N=390)

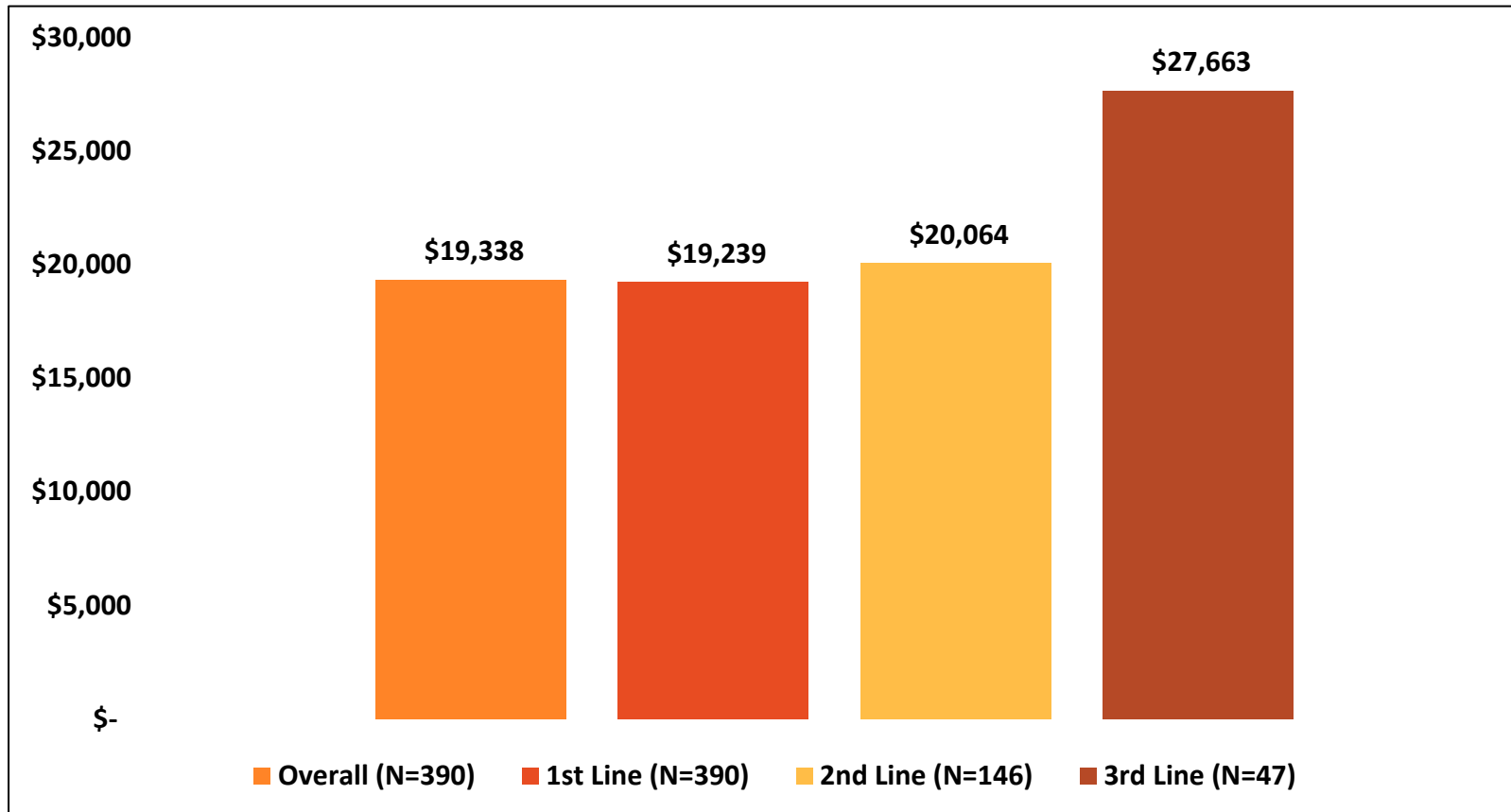




# Results – Costs associated with MCL

- Per-patient-per-month (PPPM) costs for MCL patients were \$19,338 overall, and \$19,239, \$20,064, and \$27,663 respectively, during 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> line of therapy

PPPM Costs for Overall MCL Patients (N=390)



# Study Limitations

- Nature of claims dataset: Presence of a claim doesn't indicate if the patient actually took the medication as prescribed; subject to potential miscoding entered for administrative processing
- Some eligible VA beneficiaries over the age of 65 may have also received services for which CMS was the primary payer, and those claims were not visible in the VA database
- The VHA database predominantly consist of male patients with prior military service so generalizability may be limited

# Conclusions

- Bendamustine and BTK-based regimens were the most common frontline treatments used among newly diagnosed MCL patients in the VHA population
- Costs and hospitalization rates were higher for patients who received 2<sup>nd</sup> line and 3<sup>rd</sup> line of therapy than those who received 1<sup>st</sup> line of therapy
- Future studies are warranted to further understand factors associated with treatment selection, clinical benefits and discontinuation rates among veteran patients with MCL