Productivity Loss and Indirect Costs Among Non-Hodgkin Lymphoma Patients and Their Caregivers

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Introduction: The impact of cancer care and management beyond treatment is significantly high for cancer patients. Due to the complexities of cancer treatment, patients are heavily reliant upon ancillary support often rendered by friends and family. One significant yet unquantifiable impact of cancer on society is productivity loss of both patients and their caregivers. Non-Hodgkin lymphoma is considered largely incurable with a protracted clinical course punctuated with multiple remission and relapses, warranting repeated treatment and intensive clinical testing, which necessitates significant engagement of patients and caregivers. Many patients are members of the workforce at the age of diagnosis. Both working patients and caregivers need time for medical care, which translates to indirect economic impact due to lost productivity. The objectives of this analysis were to evaluate the productivity loss and indirect costs in patients with chronic lymphocytic leukemia (CLL), mantle cell lymphoma (MCL), marginal zone lymphoma (MZL), or Waldenström macroglobulinemia (WM) and their caregivers.

Methods: The MarketScan Commercial and Health and Productivity Management databases were used to identify patients with CLL, MCL, MZL, and WM (using ICD-9/ICD-10 codes) who were continuously enrolled for ≥6 months pre- and ≥1 month post-diagnosis (index date) from 1/1/2010 to 12/31/2019. The final study cohort included patients aged 18-64 who were full-time workers with eligibility of absentee, or short-/long-term disability on index date and for ≥1 month in follow-up. Those who were pregnant during the study period were excluded. Adult, full-time employed caregivers, defined as family members covered under the same health plan as the patient, and continuously enrolled ≥6 months pre- and ≥1 month post-index, were also identified. Among those with eligibility, the percentage with a

claim of absentee, short- or long-term disability (patients only), and associated productivity time loss and indirect costs during follow-up were examined. Lost wages were calculated using the US Bureau of Labor Statistics 2019 report. For short- or long-term disabilities, mean daily wages were reduced to 70% of typical wages. Productivity time loss and costs were reported per-patient-per-month (PPPM) for each lymphoma.

Results: The final patient cohort included 3,450 CLL, 448 MCL, 1,052 MZL and 394 WM patients; the caregiver cohort included 1,435 CLL, 171 MCL, 437 MZL and 190 WM caregivers. Among eligible patients, there were higher proportions of patients that had absentee claims (CLL, 76%; MCL, 72%; MZL, 72%; WM, 82%), followed by short-term disability (CLL, 16%; MCL, 36%; MZL, 18%; WM, 17%) and long-term disability (CLL, 3%; MCL, 10%; MZL, 3%; WM, 3%) (Figure 1A). The proportions of caregivers with absentee claims (CLL, 78%; MCL, 90%; MZL, 69%; WM, 75%) were also higher than those with short-term disability (CLL, 7%; MCL, 10%; MZL, 4%; WM, 8%) (Figure 1B). For all 4 lymphoma types, average illness-related absentee hours were higher in patients than caregivers (CLL, 9.5 vs 6.9; MCL, 44.5 vs 3.6; MZL, 17.0 vs 5.0; WM, 18.2 vs 8.1). A similar pattern was observed for short-term disability days (CLL, 6.9 vs 4.2; MCL, 10.8 vs 3.4; MZL, 7.0 vs 2.2; WM, 6.7 vs 4.8). Average PPPM indirect costs were higher for patients with long-term disability (CLL, $1,433; MCL, $1,233; MZL, $1,302; WM, $2,056) than with short-term disability (CLL, $1,203; MCL, $1,950; MZL, $1,145; WM. $1,177) or absentee claims (CLL, $365; MCL, $1,606; MZL, $612; WM, $662), except for patients with MCL (Figure 2A). Similar trends were observed among caregivers, though the indirect costs due to absenteeism and short-term disability were higher in patients than caregivers (Figure 2B).

Conclusions: This real-world evidence study uncovered patients with CLL, MCL, MZL and WM and their caregivers incur substantial disease burden as shown by their productivity loss and indirect costs. Effective treatments that can offer a cure or better remission rates and shorter duration with less toxicity may not only enhance the patients and caregivers' quality of life but also reduce work loss. The availability of oral, targeted therapies has resulted in higher remission rates, durable responses, manageable toxicities and improved quality of life in trials. Future studies are needed to understand the impact of these oral,

targeted therapies on patients' and caregivers' productivity.

Figure 1A. Absenteeism, Short-Term Disability, and Long-Term Disability among CLL, MCL, MZL, WM Patients

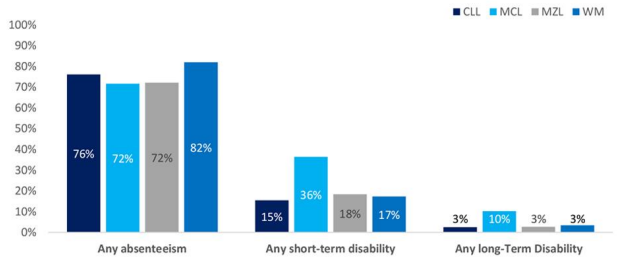


Figure 2A. Costs of Absenteeism, Short-Term Disability, and Long-Term Disability among CLL, MCL, MZL, WM Patients

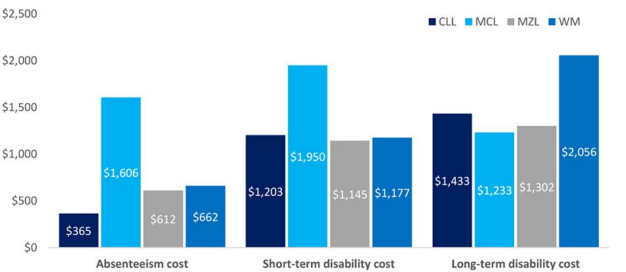
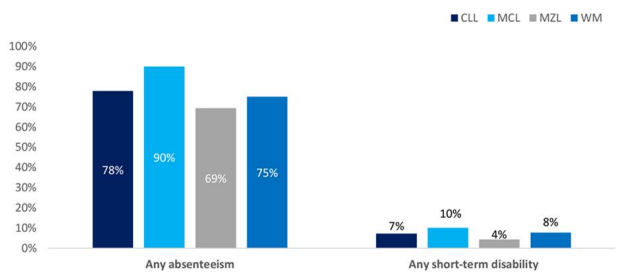


Figure 1B. Absenteeism and Short-Term Disability among CLL, MCL, MZL, WM Caregivers



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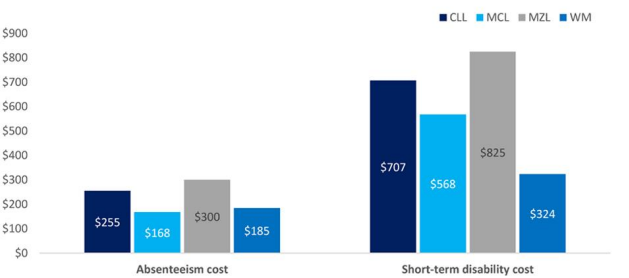

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