

Utilization Patterns and Adherence to TKIs and PCR Testing in Patients with CML in a Regional Health Plan

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Chronic Myelogenous Leukemia

Objective

- To describe utilization patterns and adherence to tyrosine kinase inhibitors (TKIs), polymerase chain reaction (PCR) testing, and mutational analysis within a regional health plan.

Background

- Chronic myelogenous leukemia (CML) is an oncology category that requires chronic treatment with oral TKIs.
 - The most appropriate choice of medication is often dependent on response to prior medications which are monitored regularly through PCR testing.
- National Comprehensive Cancer Network (NCCN) guidelines recommend PCR testing every 3 months until a complete cytogenetic response is achieved and maintained for 3 years, at which time the frequency may be reduced to one test every 6 months indefinitely.
- Patients who initiate first-line TKI therapy and receive 3 to 4 quantitative PCR tests a year have a lower risk of progression and longer progression-free survival, incur fewer inpatient admissions, and are associated with lower medical service costs compared to patients that do not receive the testing.
 - In a recent study, only 45% of patients with newly diagnosed CML underwent 3 to 4 molecular monitoring studies during the first year after diagnosis.
- Poor adherence and lack of monitoring may lead to an increase in inappropriate drug utilization, waste, and poor response to therapy.

Methods

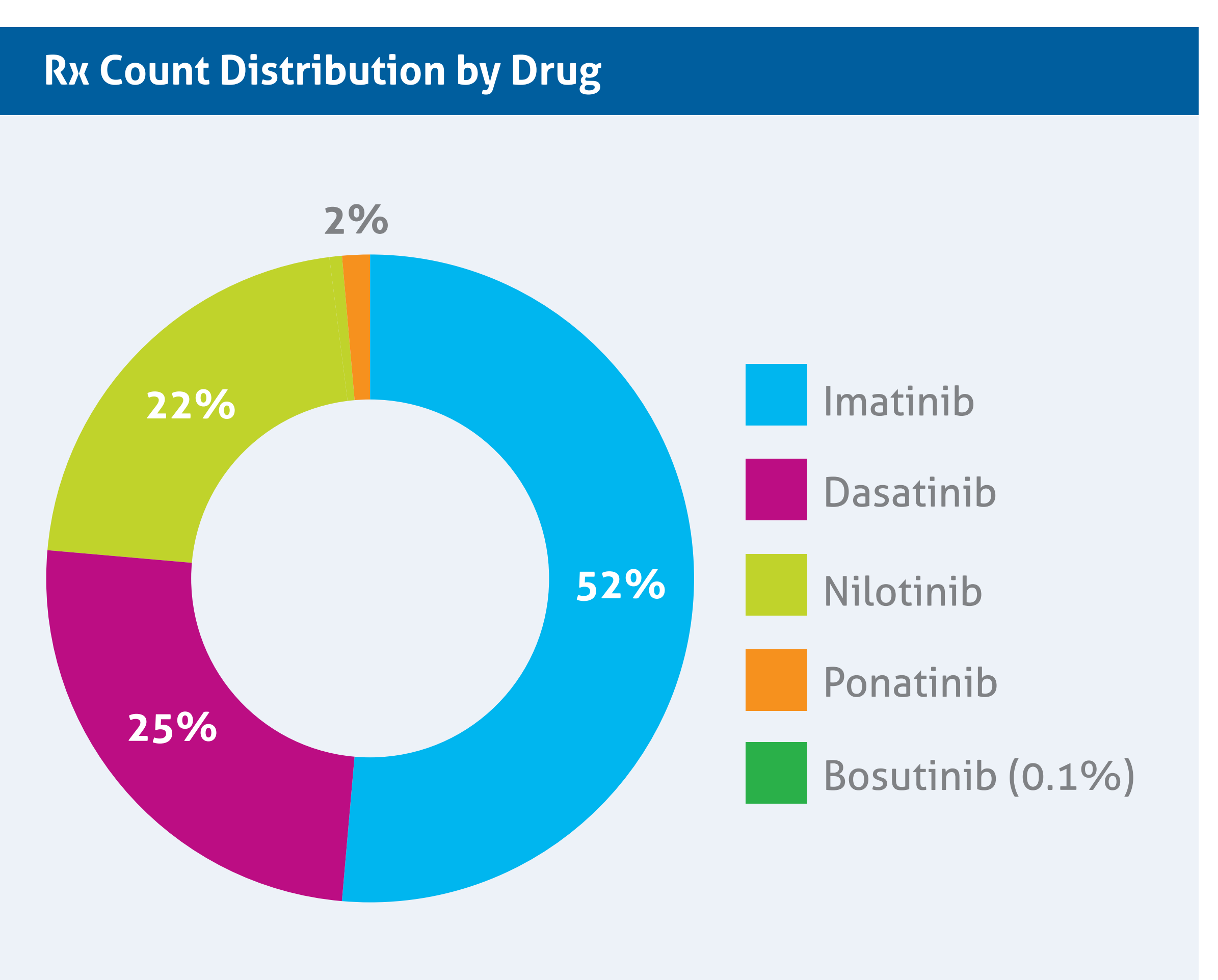
- In this retrospective analysis, medical and pharmacy claims for patients of one regional health plan (approximately 700,000 covered lives) were reviewed.
- Inclusion criteria: Continuously enrolled patients with a diagnosis code of CML who were receiving a TKI (imatinib, dasatinib, nilotinib, ponatinib, or bosutinib) between January 1, 2013 and August 15, 2014.
- The following medical and pharmacy claims data were collected for identified patients:
 - Total medical benefit spend, total pharmacy benefit spend, TKI claims, adherence (using proportion of days covered [PDC] method), PCR claims, and mutational analysis claims
- Results were analyzed using descriptive statistics.

Disclosures

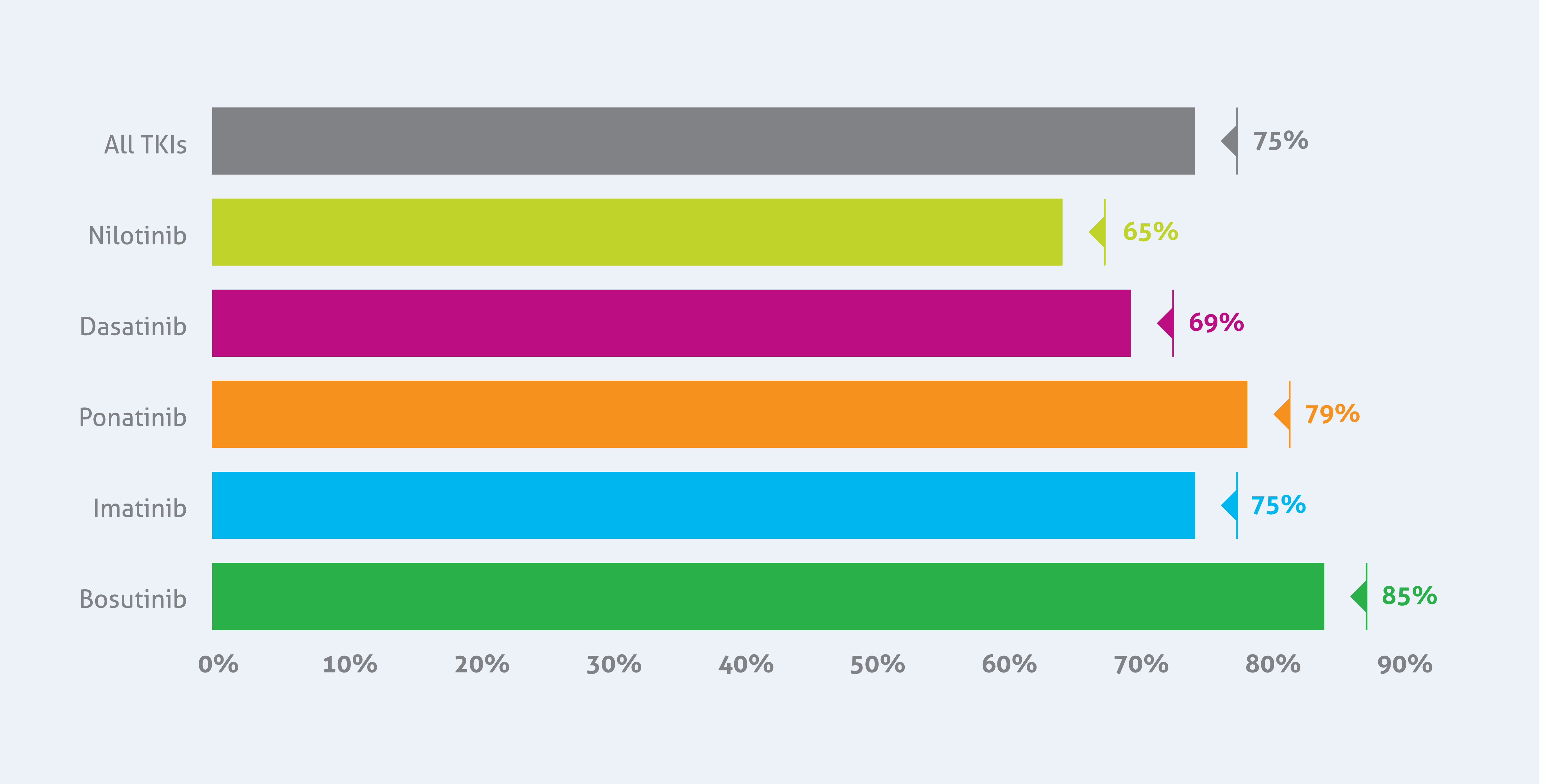
- This research was conducted by Magellan Rx Management, Newport, RI, without external funding.

Results

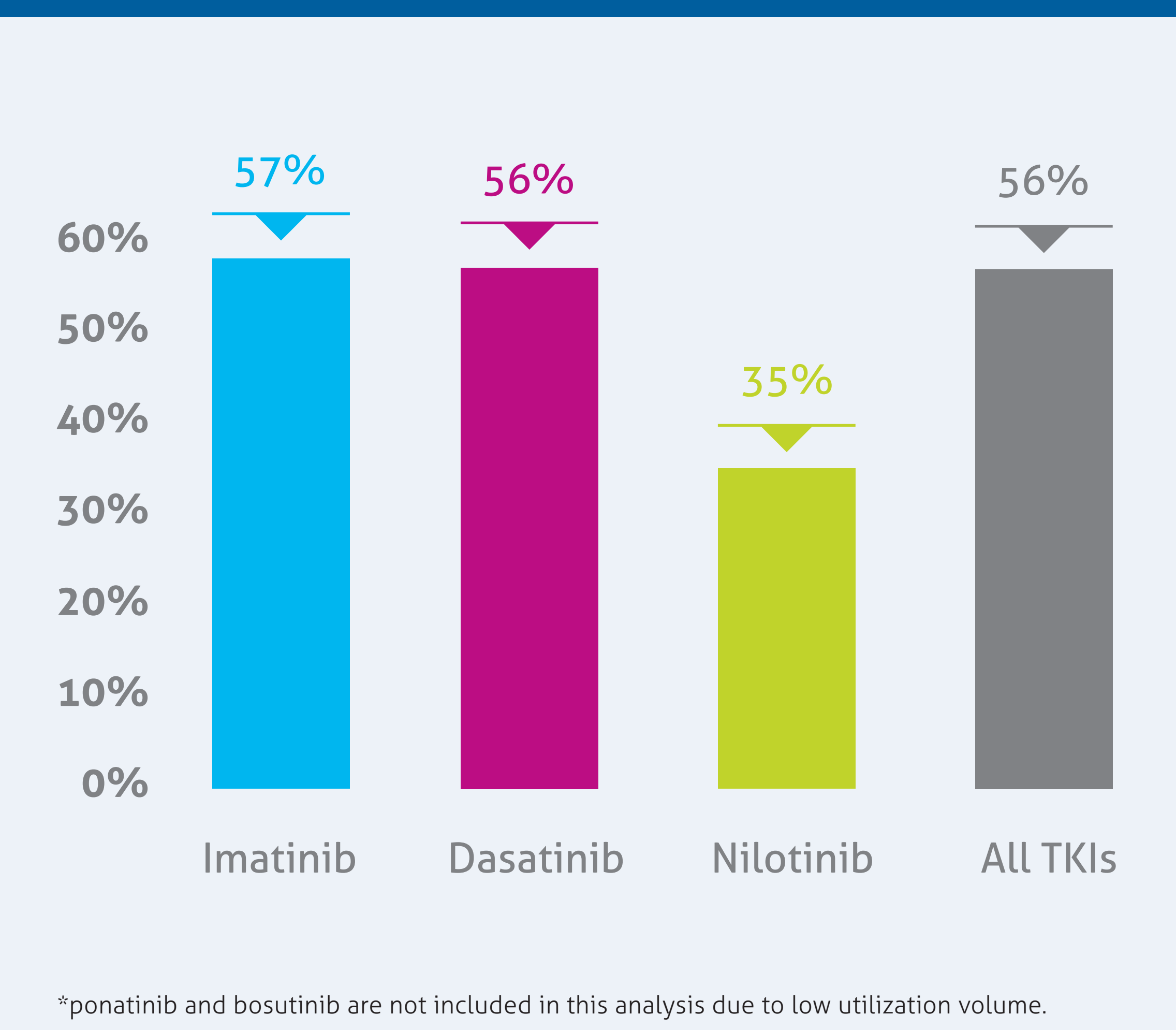
Patient Demographics	
Total Patients	70
Average Age	61 years
Age Range	28 to 87 years
Total Patients Who Switched TKIs During Study Time Frame	11
Total Medical and Pharmacy Spend	\$6,520,453



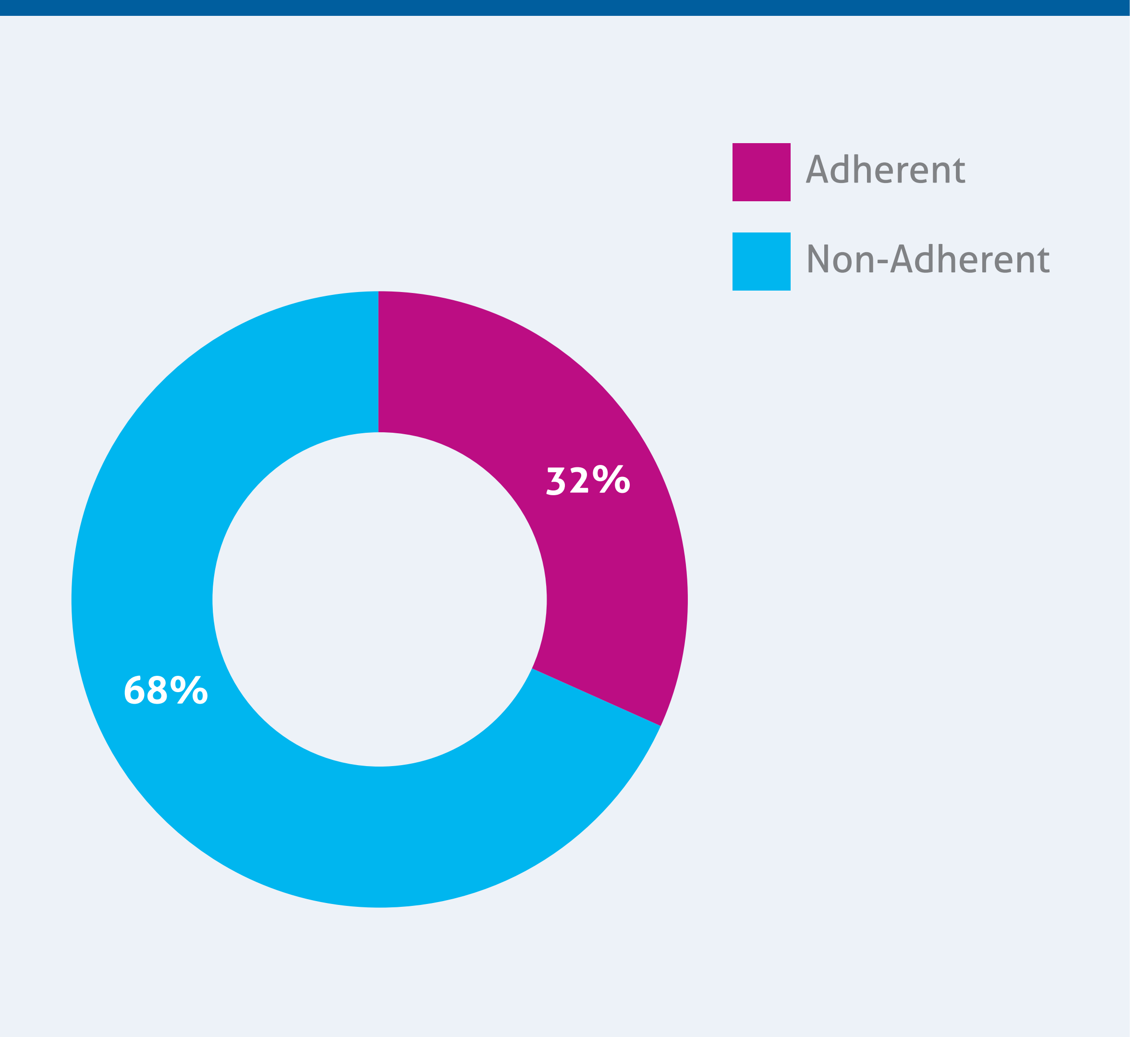
Mean Adherence Values (Proportion of Days Covered)



Percentage of Patients with Adherence of at least 85% to TKI Therapy*



Percent of Patients Adherent to PCR Testing Every 3 to 6 Months



Discussion

- A total of 70 unique patients with CML receiving a TKI were identified representing \$148,828 and \$6,361,625 in medical and pharmacy benefit spend, respectively.
- The mean TKI PDC was 75%; however only 56% of all patients maintained a PDC of at least 85%.
- Average medical benefit spend was 29% higher for patients with a PDC <85% compared to patients with a PDC ≥85%.
 - Average spend on inpatient hospitalizations was 137% higher in patients with a PDC <85%.
- Only one third of patients were compliant to receiving recommended PCR testing every 3 to 6 months.
 - 19% of patients on a TKI therapy had no record of PCR testing within the study timeframe.
- 11 patients had switched TKIs during the study time frame
 - Of these patients, only 2 had a medical claim signifying that a mutational analysis was performed prior to switching TKI therapy.
 - Without mutational testing, second-line TKI therapy may have not been selected appropriately.

Limitations

- Patient history and progress notes were unavailable to identify reason(s) for choice of TKI therapy, switches, or possible clinical explanations for poor adherence.
- Short study duration and lack of medical records make it difficult to draw conclusions regarding the impact of poor adherence to TKI therapy and PCR testing on clinical and economic outcomes.

Conclusion

- Medical and pharmacy claims data from a regional health plan demonstrate that nearly half of CML patients on TKI therapy failed to achieve a PDC ≥85%.
- Furthermore, a large proportion of CML patients are not adhering to the NCCN guideline recommended response monitoring.
- Improved medication adherence and more frequent testing are necessary to assess TKI response and optimize TKI selection.
- A clinical program that aims to improve monitoring and adherence through patient and provider outreach is one opportunity for managed care organizations to improve quality of care in CML patients.

References

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