ACCESS TO CARE FOR MEDICAID AND COMMERCIALLY-INSURED UNITED STATES PATIENTS WITH SICKLE CELL DISEASE

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Background

- Pediatric SCD population is more likely to have access to quality care (hematologists and other specialized care)[1]
- Adult SCD population has notable barriers to access of quality care that includes varying insurance coverage and specialist availability[1]
- Transition from pediatric is a critical period, but access to key treatments or services surrounding this critical transition are poorly described[1]

SCD, sickle cell disease

1. ASH. State of Sickle Cell Disease 2016 Report. Accessed 2017. http://www.scdcoalition.org/pdfs/ASH%20State%20of%20Sickle%20Cell%20Disease%202016%20Report.pdf

Objective

- To describe the outpatient and inpatient health care resource utilization patterns in a large cohort of SCD patients in the United States

Methods: Data Sources and Patient Selection

- **Data Sources**
  - Deidentified US administrative claims data extracted from the Truven Health MarketScan® Commercial & Medicaid Claims Databases
  - 5 years of data were extracted: January 1, 2009 through December 31, 2014

- **Patient Selection**
  - Either 1 inpatient or 2 outpatient (different days) non-diagnostic claims for SCD[1]
  - Have continuous enrollment with medical and pharmacy benefits for the year identified and year prior
  - Patients could qualify for multiple years if they met the above criteria in each year (ie, a patient could qualify in 2010, 2011, and 2012)

[1] ICD-9 Diagnosis Code 282.41, 282.42 or 282.6x

Methods: Data Analysis

- Utilization of the following healthcare services was measured:
  - IP admissions
  - ED visits
  - Specialist visits [hematologist/oncologist, primary care]
    - Primary care includes internal medicine, medical doctor, osteopathic, family practice, geriatric, preventative and pediatricians
    - Oncologists were included with hematologists
  - HU use
    - Any use
    - Adherence as determined by the MPR, and in those with 90 days of continuous use as determined by days supplied in outpatient pharmacy claims
- Averages across all years are reported
- All results were reported by age group (from <6 to ≥45 years) and payer (Commercial, Medicaid)

IP, inpatient; ED, emergency department; HU, hydroxyurea; MPR, medication possession ratio

Results: Annual Cohorts[1]

	2009	2010	2011	2012	2013	2014
Commercial	2619	2748	2929	3285	2752	2969
Medicaid	4807	5055	4963	5189	6649	7007

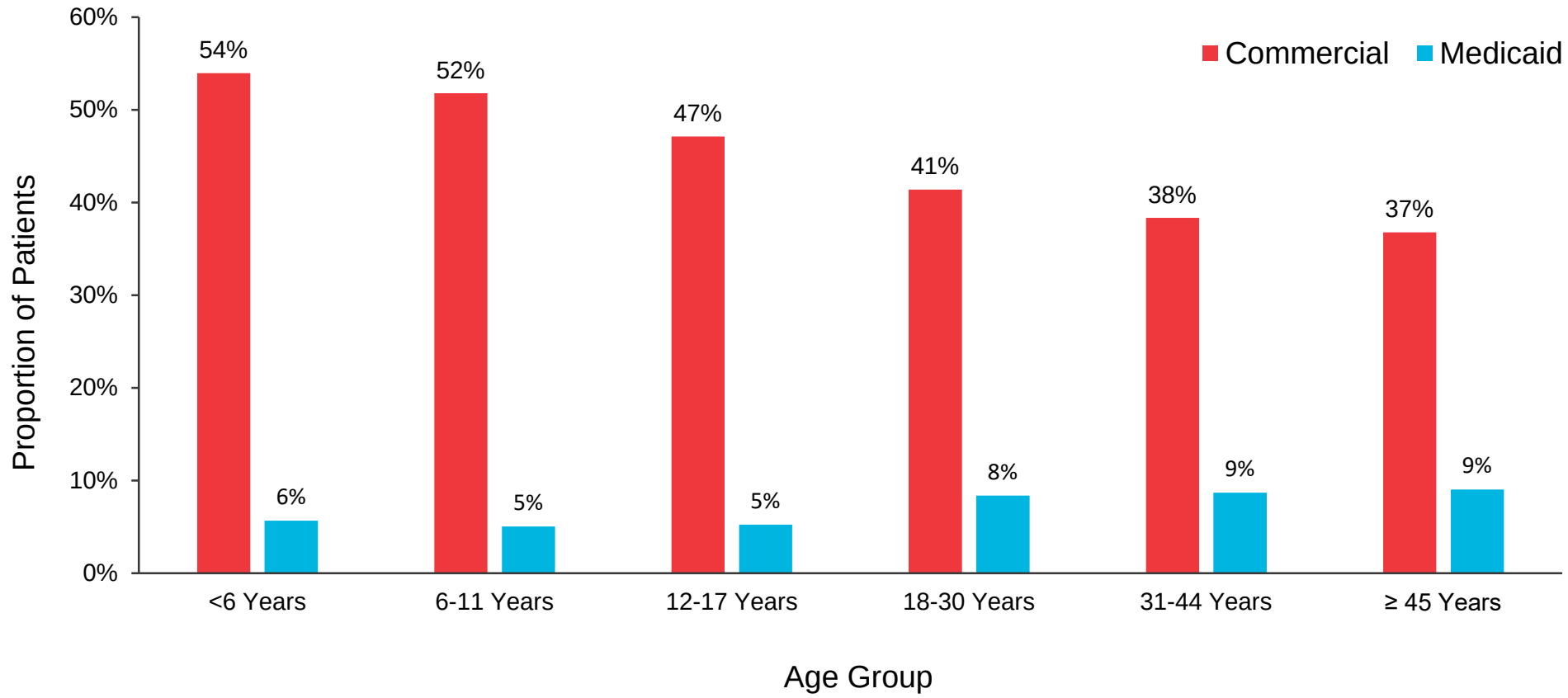
[1]MarketScan Medicaid databases had an underlying increase in enrollees compared with commercial databases during this time; Medicaid data may vary over time.

Results: Average Patient Characteristics (All Years)

	Commercial	Medicaid
Average age, mean (SD)	27.4 (17.2)	17.2 (13.1)
Age groups, y, n (%)		
<6	235 (8)	**1026 (18)**
6-11	383 (13)	**1252 (22)**
12-17	451 (16)	1115 (20)
18-30	634 (22)	1372 (25)
31-44	**579 (21)**	550 (10)
≥45	**603 (21)**	298 (5)
Females, n (%)	1658 (58)	2965 (53)
Geographic location, n (%)		N/A
Northeast	474 (16)	
North Central	490 (17)	
South	1614 (56)	
West	264 (9)	
Unknown	43 (2)	
SCD genotype, n (%)		
HbSS	1031 (36)	2480 (44)
HbSC	259 (9)	445 (8)
Sickle cell thalassemia	194 (7)	194 (4)
Other	53 (2)	73 (1)
Unspecified/Unknown	1348 (47)	2421 (43)
Top 3 comorbid conditions, n (%)		
Asthma	336 (12)	1370 (24)
Chronic pain	133 (5)	587 (11)
Acute chest syndrome	131 (5)	572 (10)

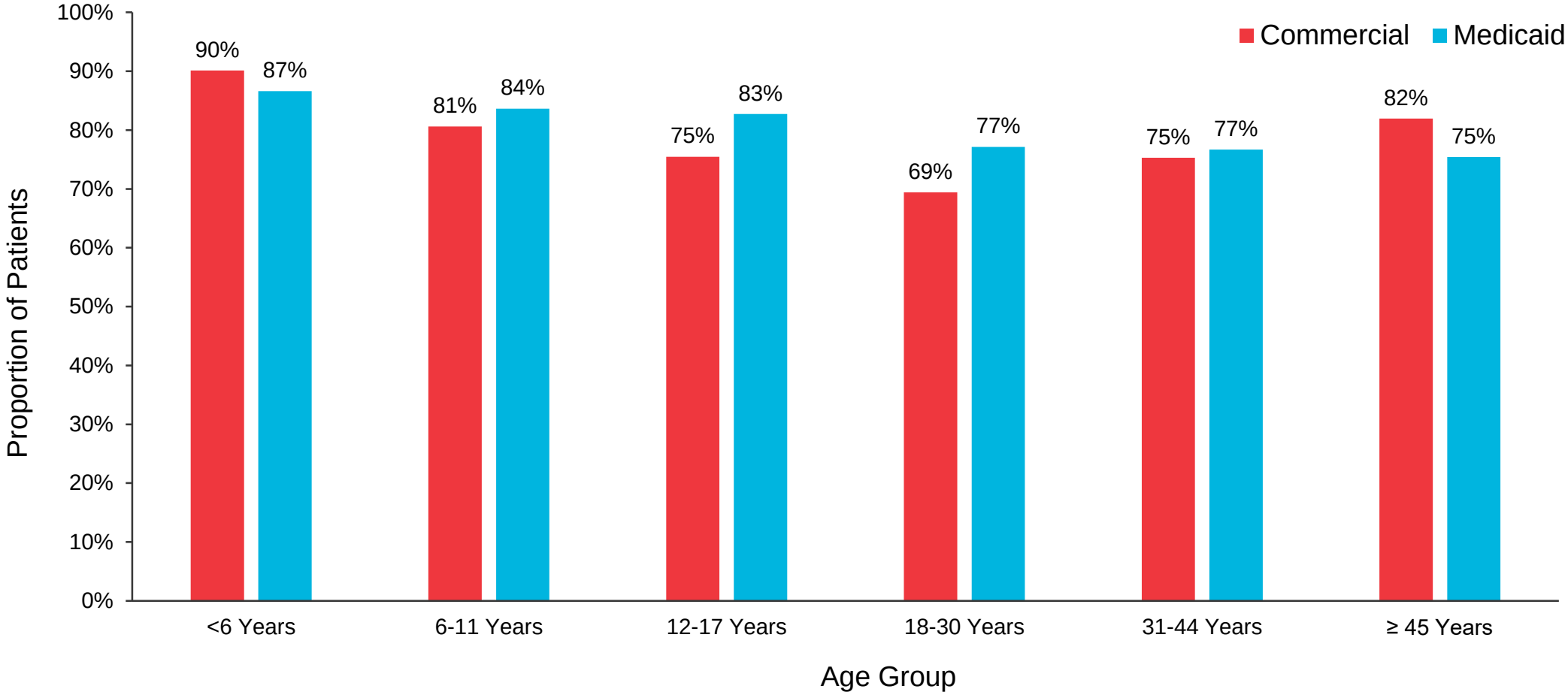
Results: A Larger Proportion of Commercial Patients Had a Hematologist/Oncologist Visit at Least Annually

- A marked drop in the proportion of patients with a hematologist/oncologist visit was observed in Commercial patients aged 18 to 30 years



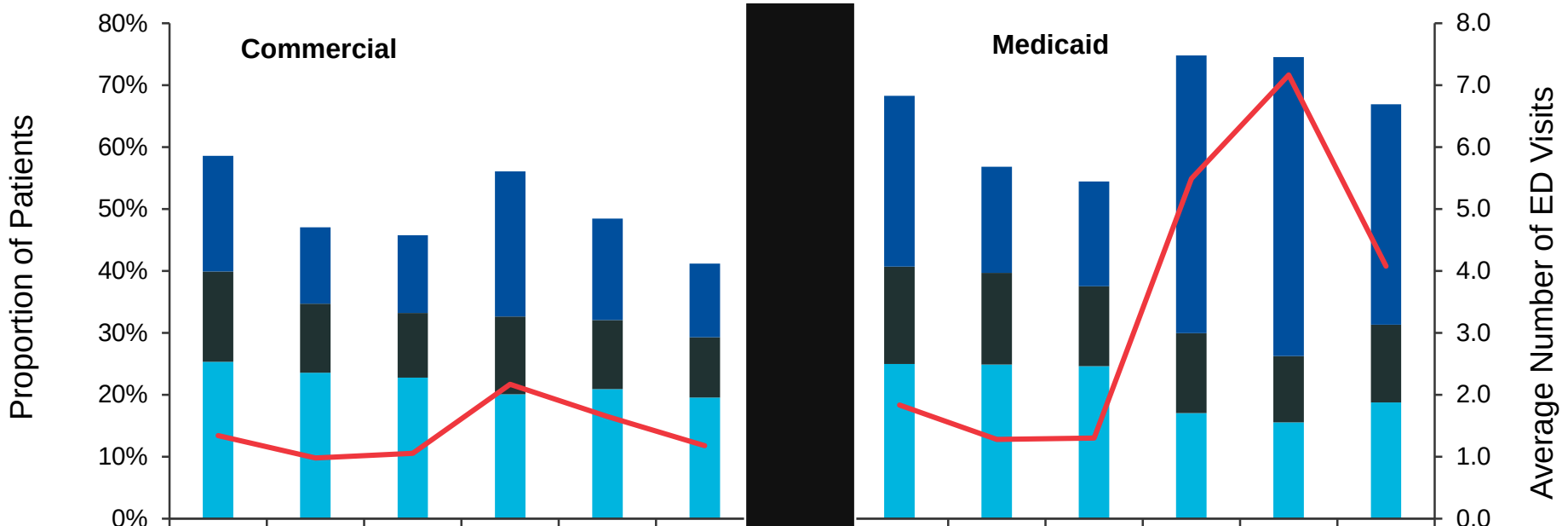
Results: Most Patients in Both Payer Cohorts Visited a Primary Care Practitioner at Least Annually

- In both payer populations, the proportion of patients with a primary care visit was the largest among those aged <6 years and lowest among those aged 18 to 30 years



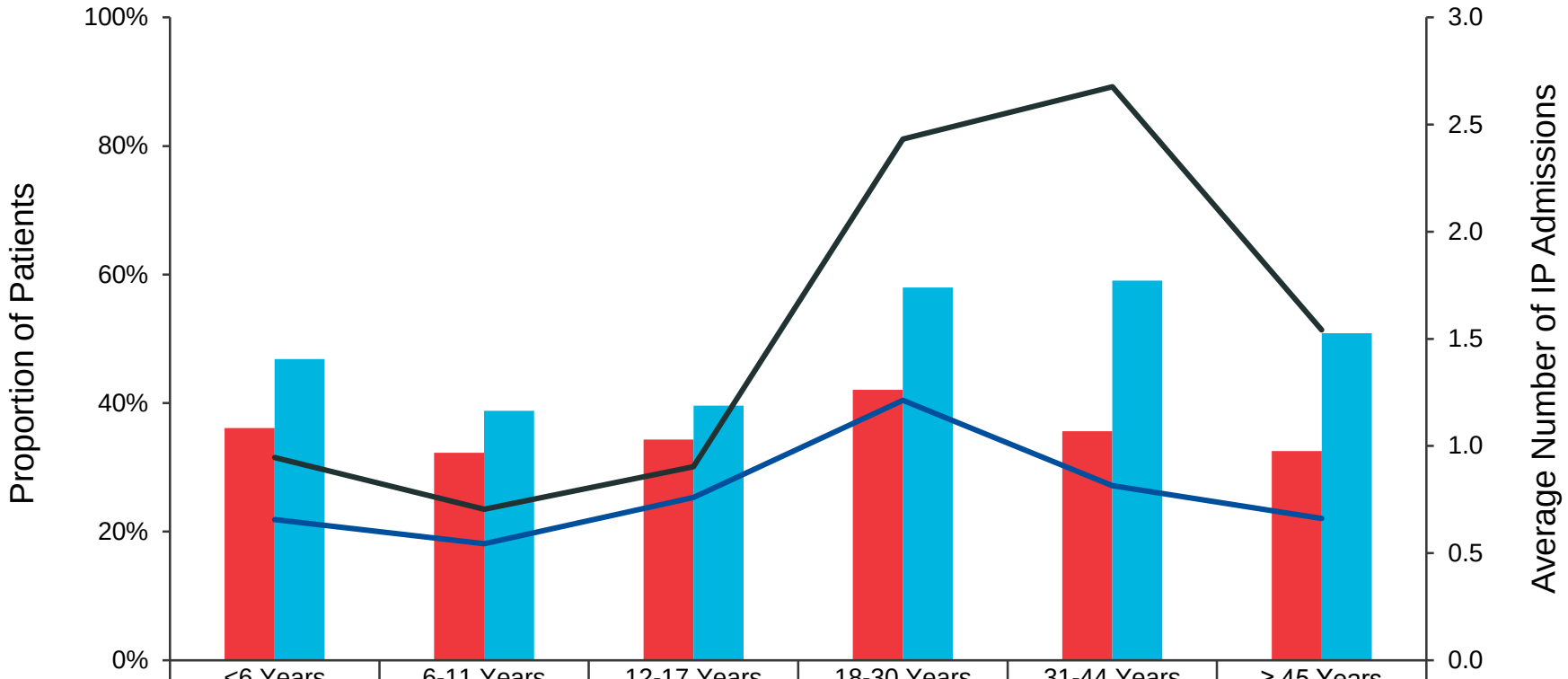
Results: Medicaid Patients Had More ED Visits vs. Commercial Patients; Trend More Marked in Adult Population

- A marked increase in the proportion of patients with ≥3 ED visits was observed in those aged 18 to 30 years in both payer populations



	Commercial						Medicaid					
	<6 Years	6-11 Years	12-17 Years	18-30 Years	31-44 Years	≥ 45 Years	<6 Years	6-11 Years	12-17 Years	18-30 Years	31-44 Years	≥ 45 Years
≥3 Visits	19%	12%	13%	23%	16%	12%	28%	17%	17%	45%	48%	36%
2 Visits	15%	11%	10%	13%	11%	10%	16%	15%	13%	13%	11%	13%
1 Visit	25%	24%	23%	20%	21%	20%	25%	25%	25%	17%	16%	19%
Average Number of Visits	1.3	1.0	1.1	2.2	1.6	1.2	1.8	1.3	1.3	5.5	7.2	4.1

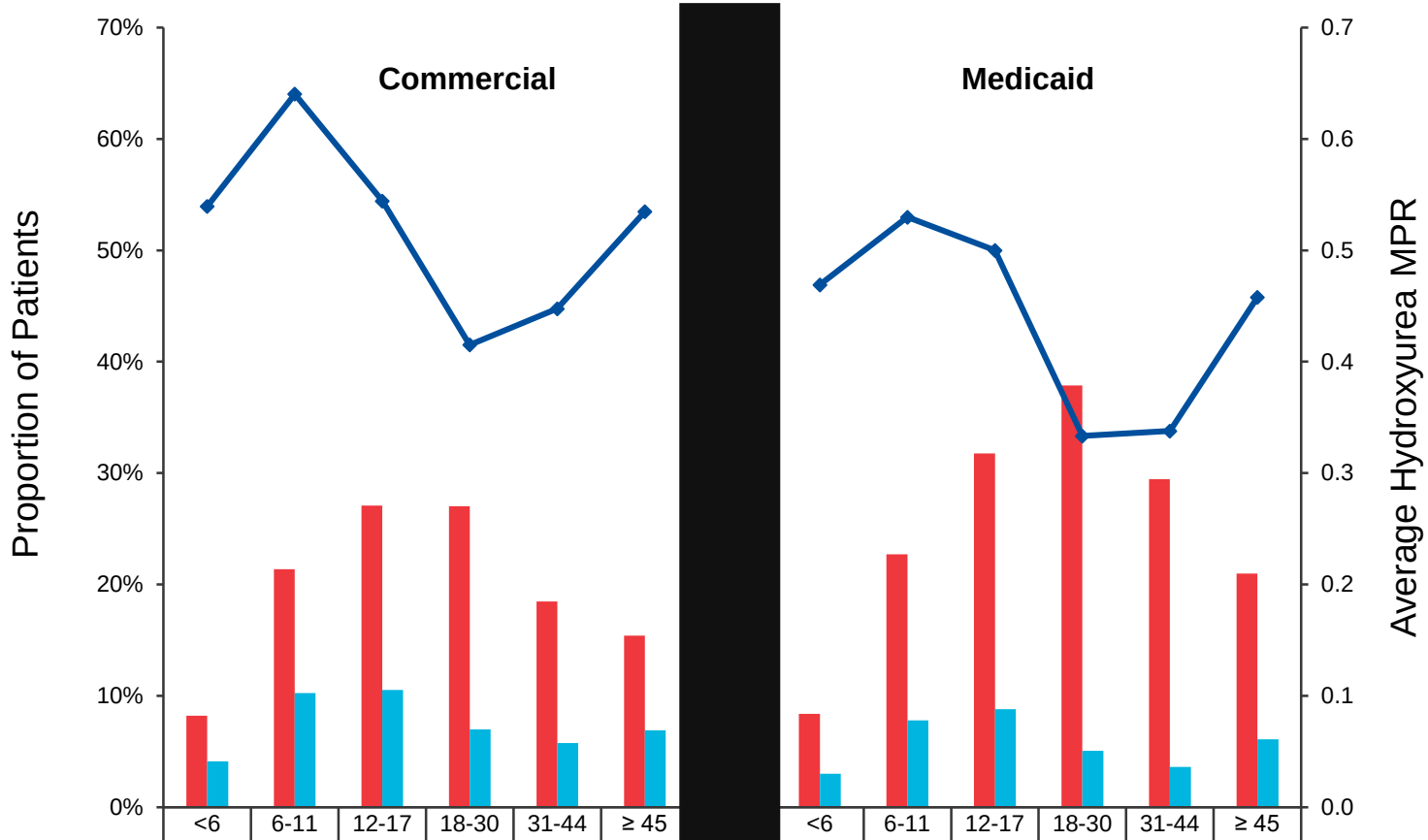
Results: Medicaid Patients Had a Number of IP Admissions vs. Commercial Patients; Difference More Marked in Adults



	<6 Years	6-11 Years	12-17 Years	18-30 Years	31-44 Years	≥ 45 Years
Commercial Patients With IP Admission	36%	32%	34%	42%	36%	33%
Medicaid Patients With IP Admission	47%	39%	40%	58%	59%	51%
Commercial Average Number of IP Admissions	0.7	0.5	0.8	1.2	0.8	0.7
Medicaid Average Number of IP Admissions	0.9	0.7	0.9	2.4	2.7	1.5

Results: Continuous Use of HU Limited in Both Payer Cohorts

- Under 40% of patients had a claim for HU across payers and age groups, and under 10% had 90 days of continuous HU use across payers and most age groups
- HU use peaked at ages 18 to 30 years in both payer populations; however, patients in this age group were least likely to use HU continuously for at least 90 days
- In all age groups, commercial patients were also more adherent (determined by MPR) to HU treatment compared with Medicaid patients



	Commercial						Medicaid					
	<6 Years	6-11 Years	12-17 Years	18-30 Years	31-44 Years	≥ 45 Years	<6 Years	6-11 Years	12-17 Years	18-30 Years	31-44 Years	≥ 45 Years
Any Hydroxyurea Use	8%	21%	27%	27%	18%	15%	8%	23%	32%	38%	29%	21%
90 Days of Hydroxyurea Use	4%	10%	11%	7%	6%	7%	3%	8%	9%	5%	4%	6%
MPR	0.5	0.6	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.3	0.3	0.5

Limitations

- The MarketScan® Research Databases represent a sample of individuals with employer- and Medicaid-sponsored health insurance; thus, findings from this study may not be generalizable to populations with other forms of insurance or the uninsured
- Data identified using ICD-9-CM diagnosis codes only reflect the claims submitted by the physicians for reimbursement
- The potential existed to underestimate the proportion of patients who visited a hematologist/oncologist because of the inability to identify nurse practitioners working in those settings who billed separately for their services. The proportion of claims with a missing/unknown provider varied greatly between payers (20% for Medicaid and 3% for Commercial)
- The potential existed to underestimate the proportion of patients using HU because HU is specified for use in patients with HbSS and all genotypes were included in the analysis. The large percentage of patients with unknown genotypes also complicated interpretation of the HU use results
- Medication data indicated drugs administered in a physician's office or filled through an outpatient pharmacy; the data do not indicate whether the medication was used as prescribed and do not capture medications purchased over the counter or administered in the inpatient setting

HbSS, sickle cell disease.

Conclusions

- Claims for hematologist/oncologist visits were strikingly low among Medicaid-insured patients. Further research is needed to determine whether this represents differential access or whether it is related to different clinic structures or billing practices
- Access to specialty care is poorest during the transition from pediatric to adult (ages 18 to 30 years) care for both Commercial and Medicaid patients
- Higher ED and IP utilization in conjunction with lower HU compliance may indicate greater disease severity and/or unmet needs among adult (aged ≥18 years) Medicaid SCD patients
- These data highlight the importance of ongoing initiatives, such as those led by the ASH SCD Coalition, to increase access to SCD care, across all patients in the United States. The need for Medicaid programs focused on SCD is also highlighted by the data

ASH SCD, American Society of Hematology Sickle Cell Disease.