

Optimizing Adherence to Intravenous Iron, a Geographic Analysis of Variability Within the United States: Single-dose Ferric Derisomaltose Shows Highest Adherence Across Healthcare Plans & Geographies

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BACKGROUND

Iron deficiency anemia (IDA) affects over 5 million people in the United States (US) and is often treated with oral iron.¹ When oral therapy is ineffective or poorly tolerated, intravenous (IV) iron is recommended.²

IV iron products range from 1-10 infusions per treatment course, with newer-generation IV iron products administered using fewer (≤ 2) high-dose infusions (e.g., 500–1,000 mg) and older-generation products requiring multiple low-dose (e.g., 200 mg) infusions.³

Adherence varies among IV iron therapies.³ Poor adherence may result in unresolved anemia and increased risks of transfusion and mortality.^{4,5}

Prior studies have shown variation in IV iron adherence by rurality and healthcare plan type, suggesting geographic and system-level influences.⁶ However, regional and state-level variation across products and plan types remains unexplored.

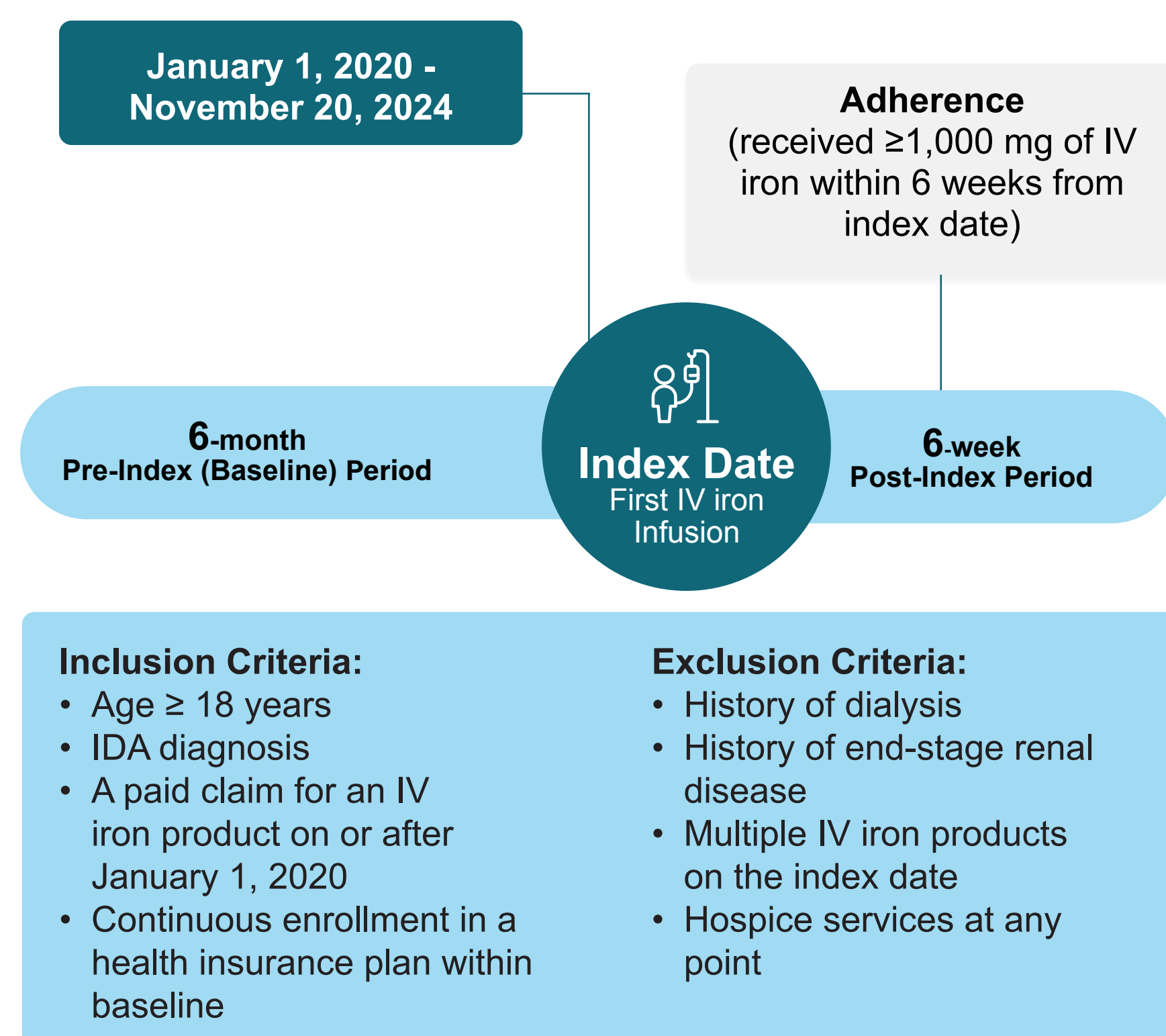
OBJECTIVE

To explore differences in adherence to IV iron products across various healthcare plan types and geographies in the US.

METHODS

A retrospective analysis of commercial and Medicare administrative claims data (Komodo's Healthcare Map) was conducted. Adult patients diagnosed with IDA who received an IV iron product between Jan 2020–Nov 2024 were included.

Figure 1. Study design



IV iron products evaluated were:

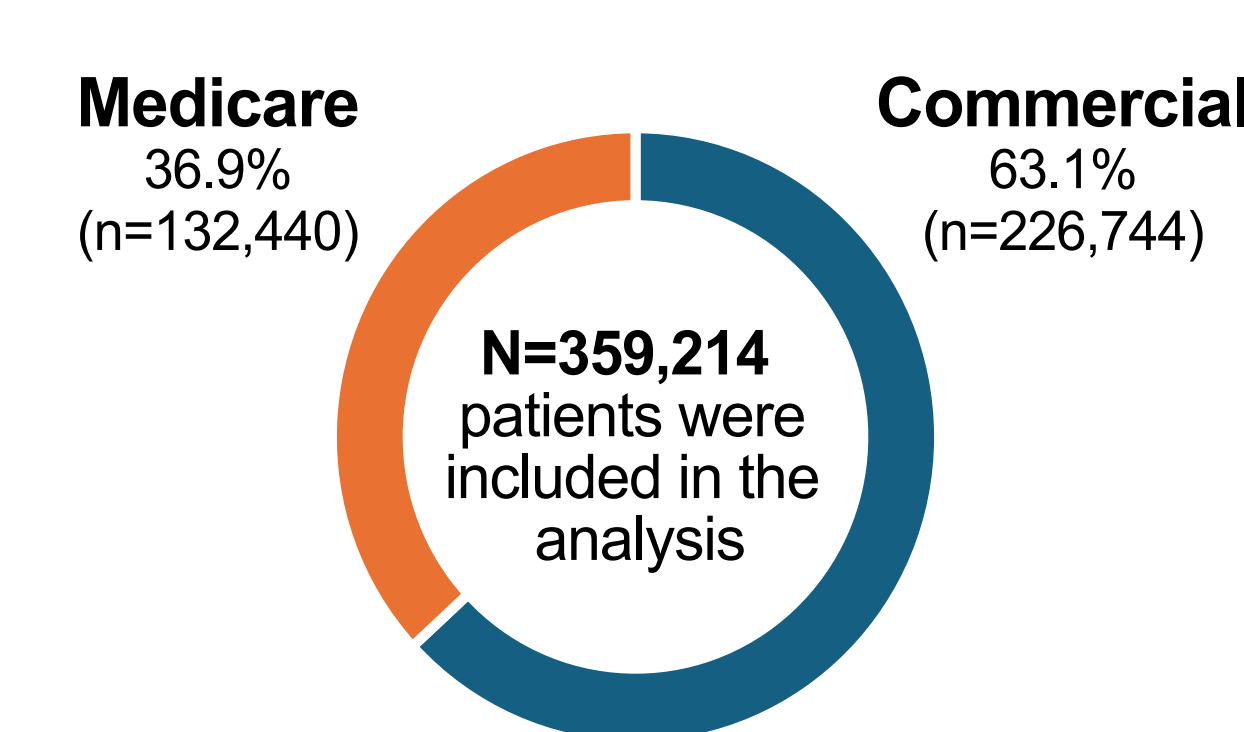
Older-generation:	Newer-generation:
• iron dextran	• ferumoxytol
• ferric gluconate	• ferric carboxymaltose
• iron sucrose	• ferric derisomaltose

Infusion locations were categorized into **nine US Census Bureau divisions**.⁷

RESULTS

Most patients were commercially insured and younger, with a higher proportion of females represented across commercial and Medicare healthcare plans (Figure 2).

Figure 2. Sample size and demographic characteristics

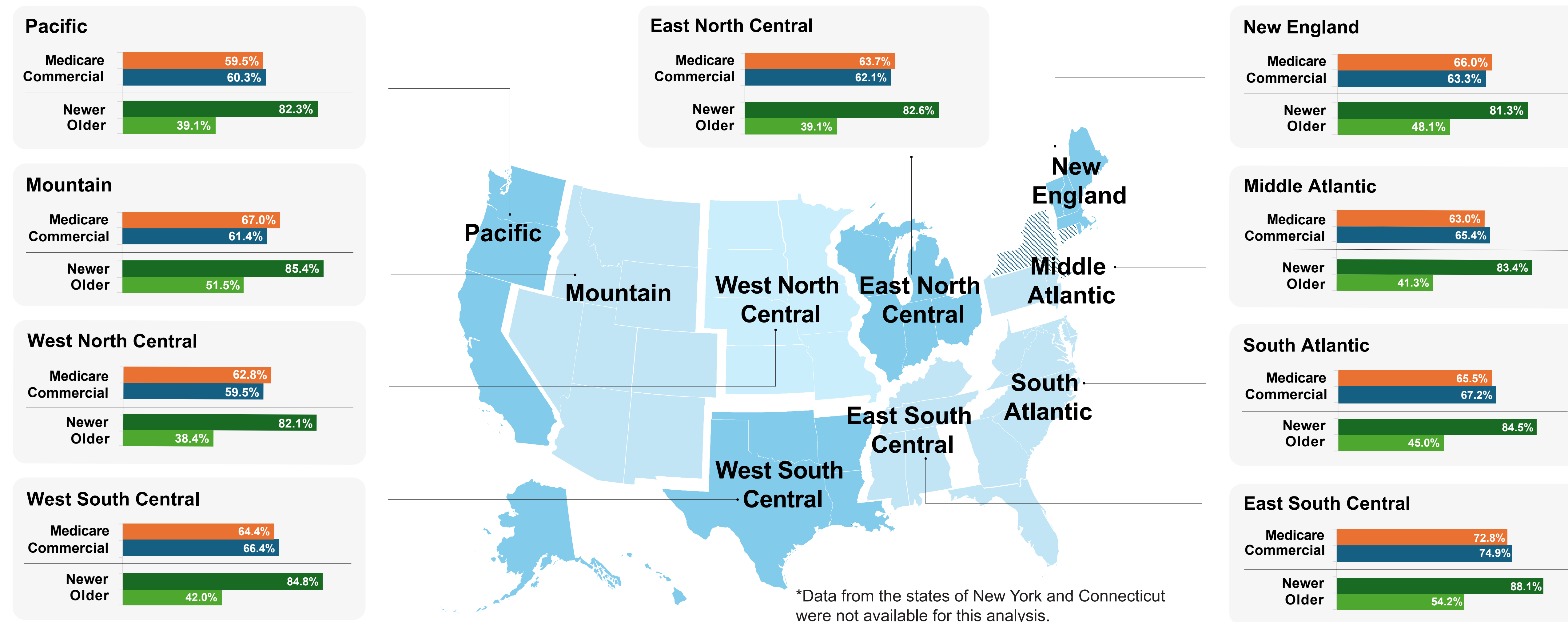


	Commercial	Medicare
The mean age was	45.6 years old	72.3 years old
Proportion of females	84.89%	65.15%

Across all IV irons, national adherence was similar in the commercial (65.0%) and Medicare population (63.7%).

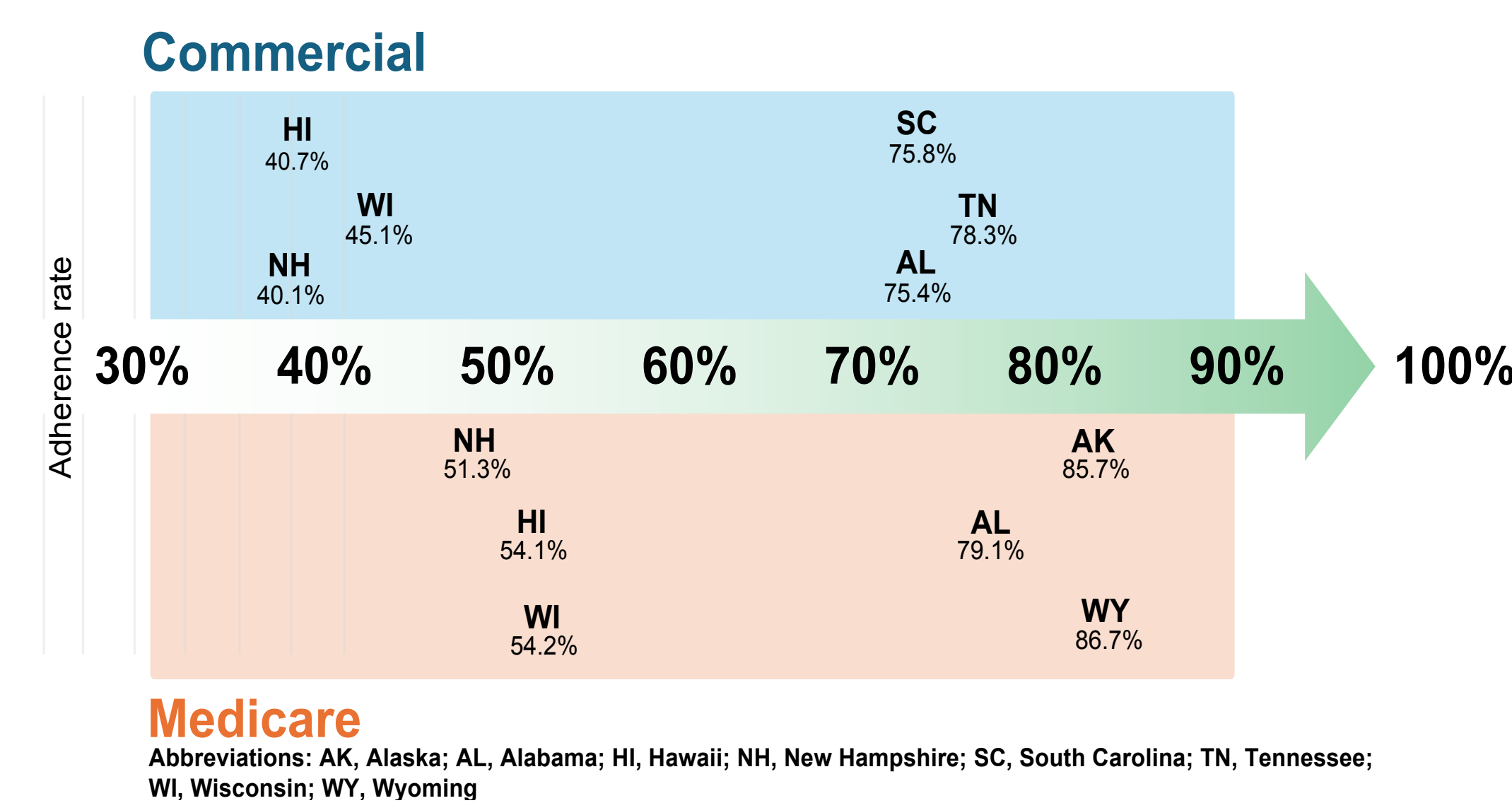
Across all US divisions, adherence rates were generally similar between commercial (59.5–74.9%) and Medicare (59.5–72.8%) populations, with newer-generation IV iron products consistently showing higher adherence than older-generation products (Figure 3).

Figure 3. Divisional adherence by healthcare plan type and product generation*



Overall adherence to IV iron was highest in Tennessee (commercial: 78.3%) and Wyoming (Medicare: 86.7%), and lowest in New Hampshire (commercial: 40.1%; Medicare: 51.3%; Figure 4).

Figure 4. Three states with the highest and lowest adherence rates by healthcare plan type



Single-dose ferric derisomaltose showed the highest adherence across divisions and healthcare plan types (commercial: 99.6%, Medicare: 99.1%), outperforming other newer-generation two-dose products like ferumoxytol and ferric carboxymaltose.

Adherence ranged from 97.6–100.0% across divisions (Table 1).

Ferric gluconate had the lowest adherence, while other IV iron products showed wide variability across healthcare plan types and divisions.

Table 1. Product-specific IV iron adherence rates by US Census Bureau division

Region	TOTAL	Iron Dextran	Ferric Gluconate	Iron Sucrose	Ferumoxytol	Ferric carboxymaltose	Ferric derisomaltose
East North Central	62.8%	76.7%	12.2%	34.4%	85.3%	78.9%	99.5%
East South Central	74.2%	87.5%	6.5%	44.2%	85.7%	88.2%	99.7%
Mountain	63.9%	80.3%	9.1%	43.0%	86.8%	84.2%	98.9%
Middle Atlantic	64.5%	87.5%	14.8%	39.0%	79.9%	82.6%	99.1%
New England	64.6%	89.1%	10.7%	41.5%	81.3%	78.8%	98.1%
Pacific	60.0%	59.1%	11.7%	37.8%	85.1%	80.4%	97.6%
South Atlantic	66.7%	78.5%	13.2%	36.6%	82.9%	84.4%	99.8%
West North Central	60.5%	80.0%	6.7%	31.1%	81.0%	82.7%	100.0%
West South Central	65.9%	69.9%	7.7%	40.1%	85.9%	82.5%	99.8%

LIMITATIONS

This analysis was based on administrative claims data and may not capture key clinical or social factors such as symptom burden, provider preferences, or care setting; as well as individual characteristics like anemia severity, comorbidities, or prior treatment history, all of which may influence adherence and dosing patterns.

Adherence was defined as receiving $\geq 1,000$ mg of IV iron within 6 weeks of the index infusion, which may not reflect individualized dosing. However, a similar study found that most (78%) IDA patients were prescribed a dose of at least 1,000 mg.⁸

State-level comparisons excluded patients from New York and Connecticut, which may affect interpretation of regional and national adherence comparisons.

This study focused on regional and state-level variation, not rurality or facility-level geography

- However, a complementary Komodo-based study found similar adherence trends across urban, rural, and super rural areas, supporting generalizability of geographic adherence findings.⁶

CONCLUSION

Variability in IV iron adherence rates was observed across healthcare plan types, divisions, and states.

- East South Central and Pacific divisions showed the highest and lowest adherence, respectively.

IV iron adherence varied by product type, with lower rates for older-generation therapies.³ Among newer-generation products, single-dose ferric derisomaltose had the highest adherence across healthcare plan types and geographies, suggesting that simplifying regimens may optimize therapy outcomes.

These findings emphasize the importance of better understanding how regional care systems and product-specific attributes, individually or together, may improve adherence and maximize outcomes in IDA.

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ABBREVIATIONS

IDA – Iron deficiency anemia
IV – Intravenous
US – United States

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