



Evaluation of Pharmaceutical Transaction Data for Potential Augmentation of SEER Treatment Data

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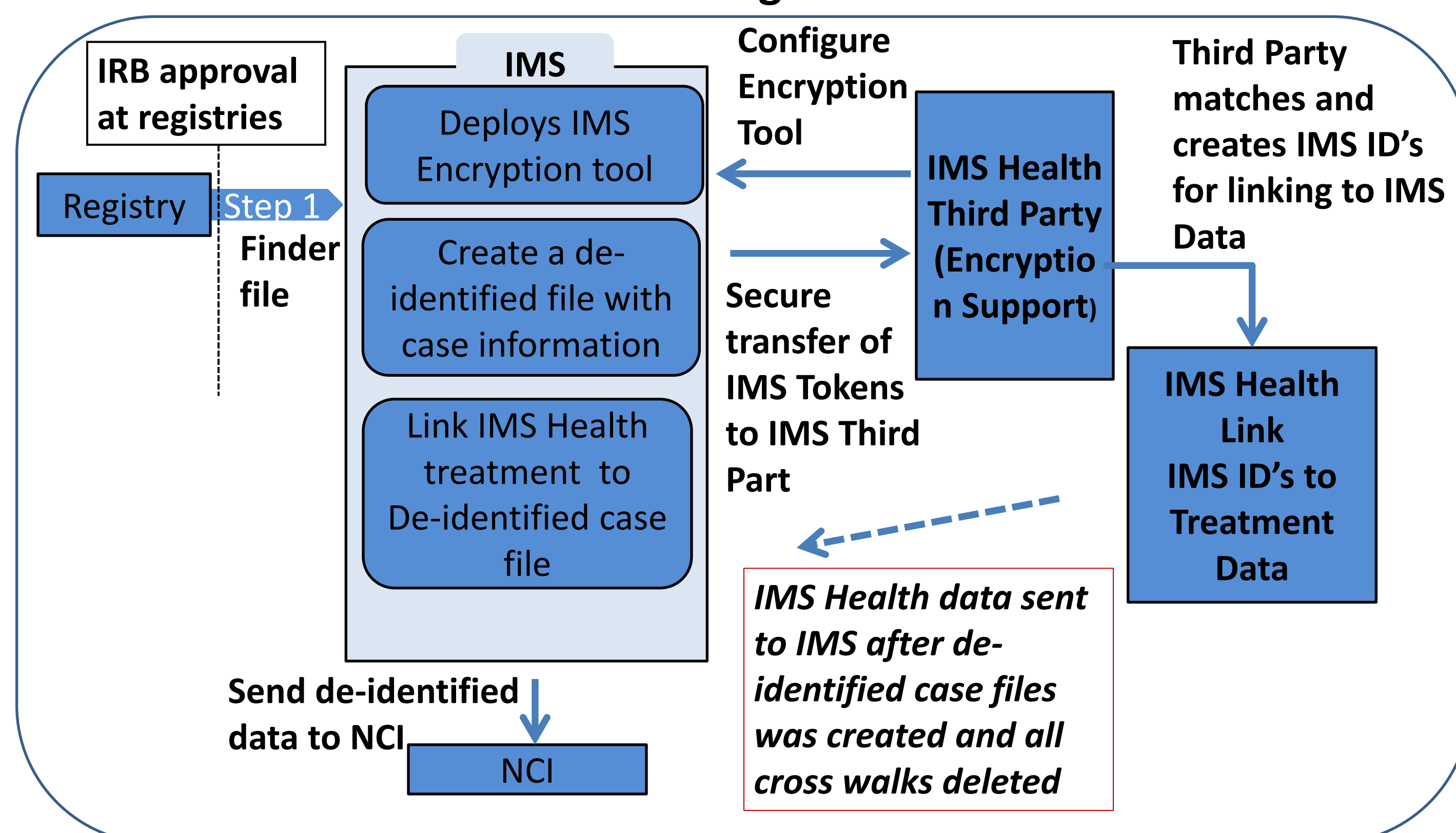
Background

- The role of orally administered antineoplastic agents in the treatment and maintenance of cancer has been increasing in the past decade with currently over 50 U.S. FDA approved agents in the market.
- Breast cancer hormonal therapy (HT) is considered a standard of care that is used in multiple facets of breast cancer treatment continuum.
- IMS Health is an information, services, and technology company drawing on information from 100,000 suppliers and more than 55 billion healthcare transactions processed annually.
- The objective of the study is to assess the completeness and representativeness of oral hormonal therapy for breast cancer cases of SEER compared to available information from IMS Health.

Methods

- ER positive female breast cancer cases diagnosed between 2007-2011 were identified from the Louisiana Tumor Registry (a SEER registry) with only one cancer.
- For each successfully matched case, IMS Health provided information on pharmaceutical transactions for Tamoxifen, Anastrozole, Exemestane, and Letrozole along with whether or not any other transactions were captured in their database for each month between 3 months before to 12 months after diagnosis.
- Treatment information in IMS Health and Medicare Part D for cases who were eligible for Medicare Part D was compared to estimate the completeness of both sources.

Data Linkage Process



Results

Table 1. Match Rates of Cases between SEER and IMS Health

	Non Matched		Matched – No Transaction around Diagnosis		Matched – Transaction around Diagnosis			
	Number	Percent	Number	Percent	Non-HT Transaction		HT Transaction	
					Number	Percent	Number	Percent
Total	670	7%	1080	11%	2932	30%	5090	52%
Year								
2007	118	7%	235	14%	458	28%	829	51%
2008	144	8%	210	11%	565	31%	920	50%
2009	145	7%	257	13%	677	33%	971	47%
2010	121	6%	242	12%	626	31%	1040	51%
2011	142	6%	136	6%	606	27%	1330	60%
Age								
<45	71	7%	76	8%	312	31%	536	54%
45-54	140	7%	217	10%	672	32%	1100	52%
55-64	168	6%	282	10%	777	29%	1497	55%
65-74	135	6%	297	13%	613	28%	1177	53%
75+	156	9%	208	12%	558	33%	780	46%
Race								
White	448	6%	780	11%	2079	29%	3812	54%
Black	213	8%	293	11%	829	32%	1232	48%

Table 1 shows the overall match rate between Louisiana cases and IMS Health was over 90% with around 80% of cases having any transaction between 3 months prior to 12 months after diagnosis and 52% having a transaction for hormone therapy around diagnosis.

Table 2. Agreement Between IMS Health and MEDICARE D Data (N=1963)

	IMS Health Yes/ MEDICARE Yes		IMS Health No/ MEDICARE No		Kappa Score
	Yes/ MEDICARE Yes	No/ MEDICARE No	Yes/ MEDICARE No	No/ MEDICARE Yes	
Total	59%	24%	4%	14%	0.61
Year					
2007	52%	26%	11%	11%	0.53
2008	57%	30%	3%	10%	0.72
2009	58%	23%	2%	17%	0.58
2010	57%	21%	1%	21%	0.51
2011	69%	20%	1%	10%	0.73
Age					
<65	38%	35%	10%	16%	0.49
65-74	64%	19%	2%	15%	0.59
>74	58%	28%	1%	14%	0.69
Race					
White	60%	22%	3%	15%	0.59
Black	56%	29%	5%	11%	0.66
Stage					
0	40%	44%	4%	12%	0.69
I	63%	20%	3%	13%	0.61
II	62%	19%	3%	15%	0.55
III	60%	19%	6%	15%	0.50
IV	51%	33%	4%	12%	0.67

Table 2 shows the agreement between IMS Health and Medicare Part D for hormone treatments (both Tamoxifen and Aromatase Inhibitors) among ER positive female breast cancer cases that were eligible for Medicare Part D and had any transaction in IMS Health around time of diagnosis.

Figure 1. Estimates of the Percent of Cases that Received Hormonal Therapy (N=1963)

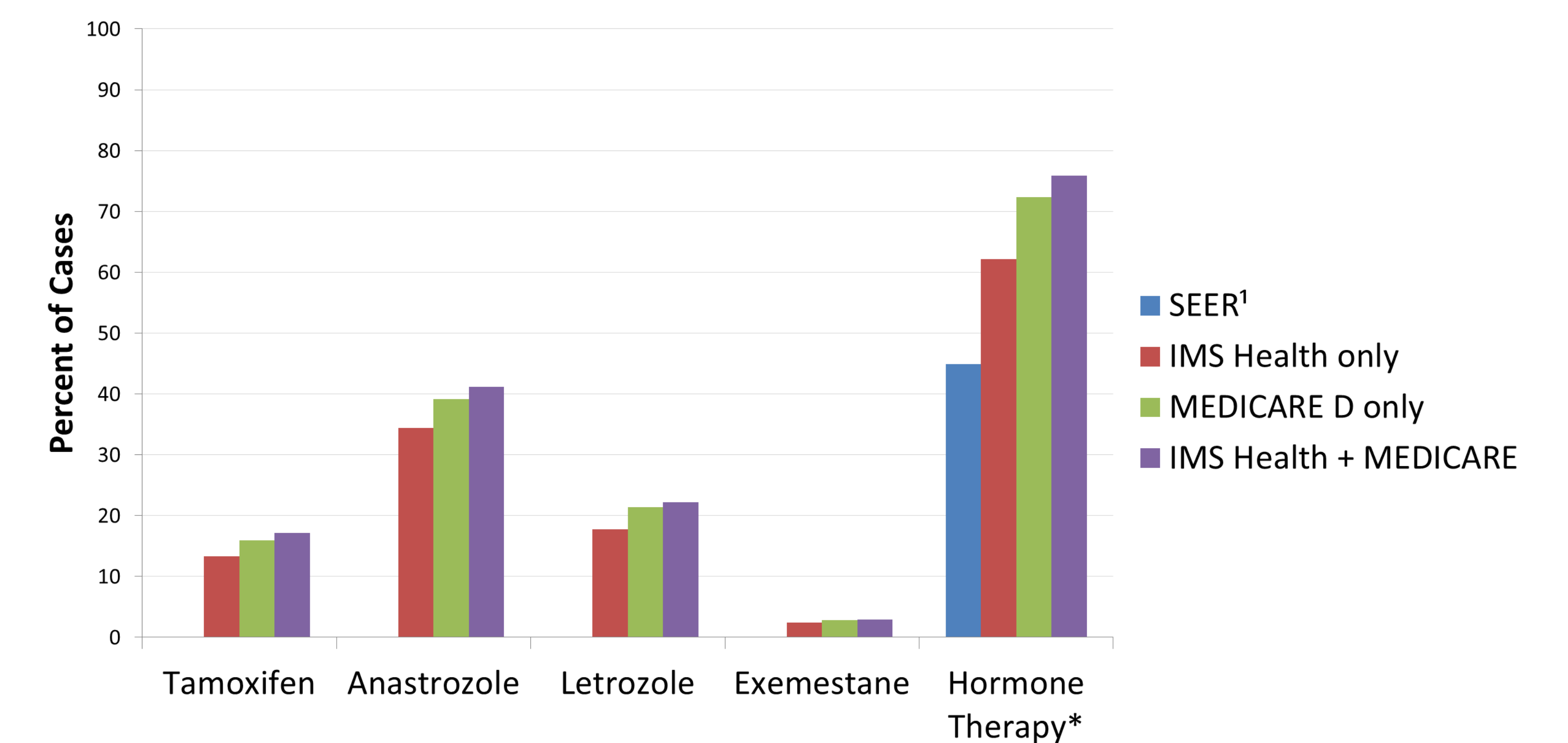


Figure 1. Percent of cases who had a hormone therapy transaction in Medicare Part D and/or IMS Health (N= 1963)

¹Hormonal therapy is captured as a nonspecific binary variable (Yes vs. No) in SEER

*Tamoxifen and Aromatase Inhibitors (Anastrozole, Letrozole, Exemestane)

Conclusions

- Pharmaceutical transaction data from IMS Health is a valuable source of information for oral breast cancer hormonal therapy.
- Over 90% of cases were matched to IMS Health and 82% had a pharmaceutical transaction around time of diagnosis.
- After limiting the analysis to cases eligible for Medicare Part D with a pharmacy transaction around diagnosis in IMS Health, overall agreement rate for hormone treatment was around 80%.
- 14% of cases with a hormone therapy claim in Medicare Part D had missing information in IMS Health. Suggesting patients had prescriptions filled at pharmacies not covered in the IMS Health data.
- 4% of cases with a hormone therapy claim in IMS Health had missing information Medicare Part D. The highest estimate of usage was obtained by combining Medicare Part D and IMS Health data.

For more information about SEER, visit <http://seer.cancer.gov/>. For more information about the Surveillance Research Program, visit <http://surveillance.cancer.gov/>

