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Background

- Approximately 135,430 new cases of colorectal cancer (CRC) are expected to be diagnosed in 2017 in the U.S.
- It has been estimated that there were 49,190 deaths from CRC in 2016 in the U.S.
- Proper and timely treatment is crucial to the effective management of CRC
- This study seeks to provide insight into the diagnosis and subsequent treatment of CRC patients among different payer types

Objective

• Compare treatment patterns for CRC patients enrolled in regional commercial, Medicaid and Medicare plans to patterns of CRC treatment in a sample of national commercial health plan patients

Methods

- This was a retrospective study of claims data from commercial, Medicaid, and Medicare plans between October 1, 2013, and September 30, 2015
- Two separate sources were used
 - The first source consists of health plan data from the three mentioned lines of business from Magellan
 - o The second dataset consists of commercial data included in the Bayer TRACE (TReatment and Analysis of Colorectal Cancer Evidence) tool, which is a platform that can import and analyze claims data for CRC-related metrics. This data will be referred to as TRACE
- Inclusion criteria for all study groups included
 - A least one diagnosis for CRC
 - 18 years or older at the index date
 - No chemotherapy, radiation therapy, or cancer surgery prior to the index date
 - Not diagnosed with any other primary cancer during the study period
 - 6 months of baseline data prior to the index date
 - o 3 or more months of follow up data after the index date
- Three study groups were assigned based on the presence and timing of CRC and metastatic CRC diagnoses
 - o CRC
 - No claims for distant metastasis
 - Index date was defined as the first CRC diagnosis
 Initial mCRC
 - At least 1 claim for distant metastasis within 30 days before the index date or within 6 months after the first CRC diagnosis
 - Index date was defined as the first mCRC diagnosis
 - Progressed mCRC
 - At least 1 claim for distant metastasis, the first of which occurred greater than 6 months after the first CRC
- Index date was defined as the first mCRC diagnosis
- Metrics assessed included

References

- Time from diagnosis to treatment
- Top chemotherapy treatment regimens for CRC therapy
- o Compliance with NCCN Colon Cancer Treatment Guidelines (V2 2016)¹

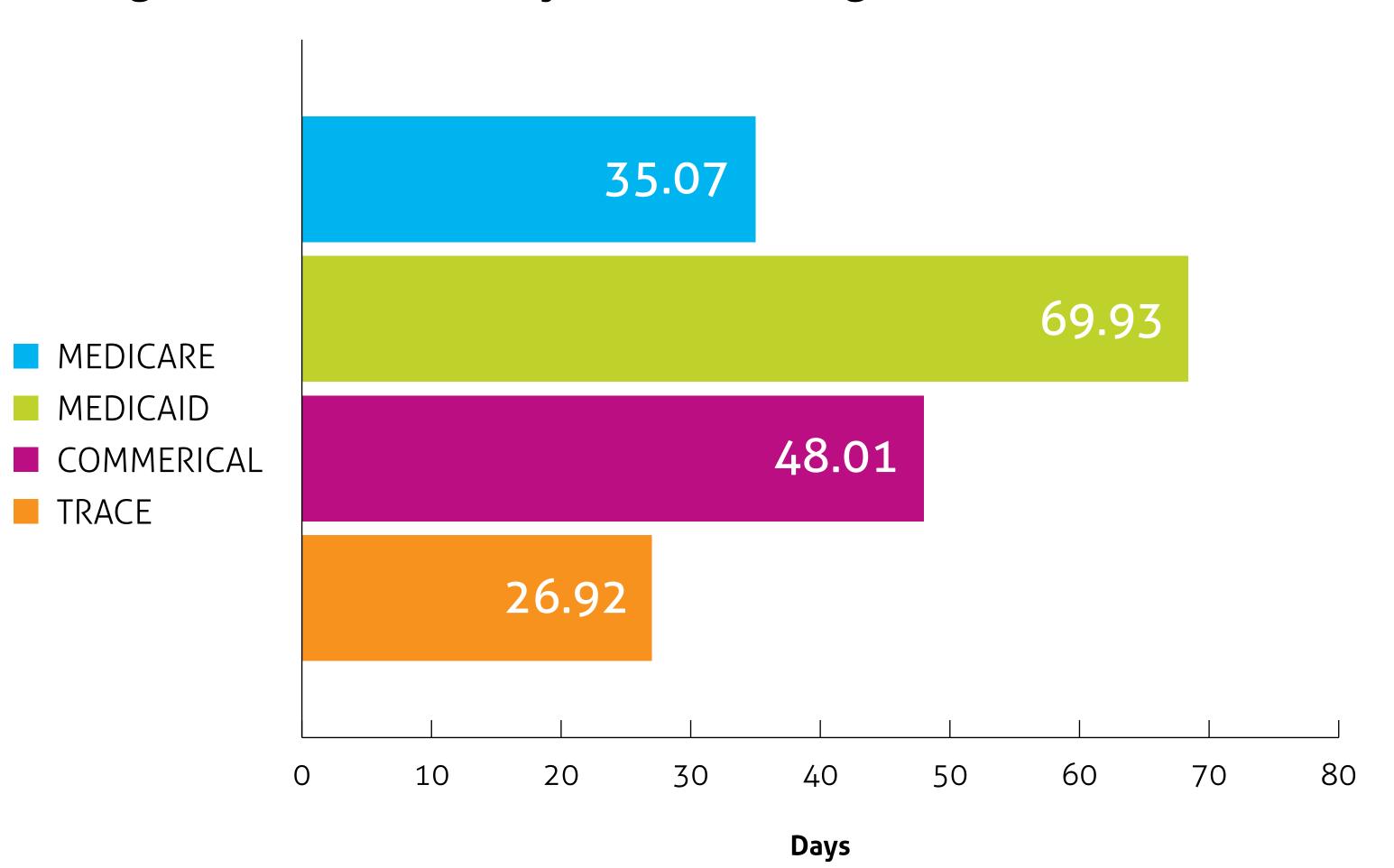
Results

- Total members meeting inclusion criteria were 2,539 for commercial, 1,521 for Medicare, 156 for Medicaid, and 1,074 for TRACE
- The number of days from CRC diagnosis to first treatment was 48 days (SD=103) for the commercial group, 27 days (SD=50) for the TRACE group, 35 days (SD=64) for Medicare, and 70 days (SD=76) for Medicaid
- The two most commonly administered chemotherapy regimens were FOLFOX (i.e., Leucovorin, Fluorouracil, Oxaliplatin) (39% commercial, 37% TRACE, 26% Medicare, and 17% Medicaid) and capecitabine (13% commercial, 17% TRACE, 20% Medicare, 14% Medicaid) The third most common regimen for both commercial plans was fluorouracil (11% commercial, 10% TRACE), fluorouracial/leucovorin for Medicare (8%) and oxaliplatin for Medicaid (13%)
- A small portion of members treated with chemotherapy progressed through 3 lines of therapy (commercial 4.5%, Medicare 2.5%, Medicaid 11%, and TRACE 1.9%)

Table 1. Total Members Meeting Inclusion Criteria

	СОММЕ	RCIAL	MEDIC	CAID	MEDIC	ARE	TRACE		
	#	%	#	%	#	%	#	%	
CRC	1,637	64%	87	56%	1,147	75%	763	71%	
Initial MCRC	705	28%	66	42%	300	20%	282	26%	
Progressed MCRC	197	8%	3	2%	74	5%	29	3%	
Grand Total	2,539	100%	156	100%	1,521	100%	1,074	100%	

Figure 1. Number of Days from CRC Diagnosis to First Treatment



COMMERCIAL n=2,539 n=156

Table 3a. Most Commonly Administered Chemotherapy Regimen

	n-	2,539		n≡	156		N-	=1,521		U=1	L,0/4	
Rank	Regimen	Members	%	Regimen	Members	%	Regimen	Members	%	Regimen	Members	%
1	FOLFOX	639	39%	FOLFOX	19	17%	FOLFOX	171	26%	FOLFOX	203	37%
2	CAPECITABINE	214	13%	CAPECITABINE	16	14%	CAPECITABINE	131	20%	CAPECITABINE	106	17%
3	FLUOROURACIL	190	11%	OXALIPLATIN	15	13%	5FU/LEUCOVORIN	54	8%	FLUOROURACIL	64	10%
4	FOLFOX+ BEVACIZUMAB	140	8%	FLUOROURACIL	13	11%	FOLFOX+ BEVACIZUMAB	53	8%	FOLFOX+ BEVACIZUMAB	54	9%
5	OXALIPLATIN	91	5%	FOLFIRI+ BEVACIZUMAB	11	10%	FLUOROURACIL	45	7%	5FU/ LEUCOVORIN	28	4%
6	FOLFIRI+ BEVACIZUMAB	83	5%	5FU/ LEUCOVORIN	10	9%	BEVACIZUMAB	29	4%	FOLFIRI+ BEVACIZUMAB	26	4%
7	5FU/ LEUCOVORIN	69	4%	FOLFOX+ BEVACIZUMAB	9	8%	5FU/ LEUCOVORIN+ BEVACIZUMAB	27	4%	CAPEOX	25	4%
8	BEVACIZUMAB	65	4%	REGORAFENIB	9	8%	FLUOROURACIL OXALIPLATIN	25	4%	FLUOROURACIL OXALIPLATIN	13	2%
9	FOLFIRI	62	4%	BEVACIZUMAB OXALIPLATIN	7	6%	CAPEOX	25	4%	FOLFIRI	12	2%
10	САРЕОХ	45	3%	FOLFIRI	6	5%	FOLFIRI+ BEVACIZUMAB	23	4%	BEVACIZUMAB	12	2%

MEDICARE

FOLFOX = LEUCOVORIN+FLUOROURACIL+OXALIPLATIN

CAPEOX = CAPECITABINE+OXALIPLATIN

5FU = FLUOROURACIL

FOLFIRI = LEUCOVORIN+FLUOROURACIL+IRINOTECAN

Table 3b. Most Commonly Administered Chemotherapy Regimens by Line of Therapy

	COMMERCIAL n=2,539		MEDICAID n=156			MEDICARE n=1,521			TRACE n=1,074				
Line of Therapy	Rank	Regimen	N	%	Regimen	N	%	Regimen	N	%	Regimen	N	%
	1	FOLFOX	544	33%	FOLFOX	16	14%	FOLFOX	154	24%	FOLFOX	202	32%
	2	CAPECITABINE	180	11%	OXALIPLATIN	14	12%	CAPECITABINE	117	18%	CAPECITABINE	97	16%
	3	FLUOROURACIL	175	11%	FLUOROURACIL	11	10%	FOLFOX+ BEVACIZUMAB	50	8%	FLUOROURACIL	63	10%
	4	FOLFOX+ BEVACIZUMAB	117	7%	CAPECITABINE	10	9%	5FU/ LEUCOVORIN	46	7%	FOLFOX+ BEVACIZUMAB	50	8%
	5	OXALIPLATIN	82	5%	5FU/ LEUCOVORIN	7	6%	FLUOROURACIL	39	6%	FOLFIRI+ BEVACIZUMAB	22	4%
	1	FOLFOX	101	20%	CAPECITABINE	6	12%	CAPECITABINE	23	15%	FOLFOX	30	24%
	2	CAPECITABINE	52	10%	FOLFIRI	3	6%	FOLFOX	19	12%	CAPECITABINE	15	12%
2	3	BEVACIZUMAB	30	6%	FOLFOX	3	6%	5FU/ LEUCOVORIN+ BEVACIZUMAB	12	8%	CAPEOX	9	7%
	4	5FU/ LEUCOVORIN	28	6%	FOLFIRI+ BEVACIZUMAB	3	6%	5FU/ LEUCOVORIN	10	6%	5FU/ LEUCOVORIN	9	7%
	5	FOLFOX+ BEVACIZUMAB	24	5%	5FU/ LEUCOVORIN	3	6%	BEVACIZUMAB	9	6%	FOLFOX+ BEVACIZUMAB	5	4%
	1	FOLFIRI+ BEVACIZUMAB	11	10%	FOLFIRI+ BEVACIZUMAB	5	29%	BEVACIZUMAB	3	9%	CAPECITABINE	6	30%
	2	BEVACIZUMAB	10	9%	BEVACIZUMAB	2	12%	CAPECITABINE	3	9%	MERCAPTOPURINE	1	5%
3	3	FOLFOX	8	7%	REGORAFENIB	1	6%	IRINOTECAN	2	6%	METHOTREXATE	1	5%
	4	FOLFIRI	7	6%	FLUOROURACIL	1	6%	FOLFOX+ BEVACIZUMAB	2	6%	RITUXIMAB	1	5%
	5	5FU/ LEUCOVORIN	6	5%	FLUOROURACIL IRINOTECAN LEVOLEUCOVORIN 7IV-AFLIBERCEPT	1	6%	OXALIPLATIN	2	6%	FOLFIRI	1	5%

FOLFOX = LEUCOVORIN+FLUOROURACIL+OXAL IPLATIN

CAPEOX = CAPECITABINE+OXALIPLATIN

FOLFOXIRI = FLUOROURACIL+LEUCOVORIN+OXALIPLATIN+IRINOTECAN

5FU = FLUOROURACIL

FOLFIRI = LEUCOVORIN+FLUOROURACIL+IRINOTECAN

Table 4. NCCN Compliant Chemotherapy by Line of Therapy

COMMERCIAL MEDICAID

		COMMERCIAL n=2,539			MEDICAID n=156				MEDICARE n=1,521		TRACE n=1,074		
		Treated	NCCN Complaint	% Complaint	Treated	NCCN Complaint	% Complaint	Treated	NCCN Complaint	% Complaint	Treated	NCCN Complaint	% Complaint
Percentage	1st Line	1,624	1,045	64%	111	53	48%	633	452	71%	621	437	70%
of patients receiving	2nd Line	492	326	66%	49	30	61%	150	105	70%	123	93	76%
treatment in compliance with NCCN	3rd Line	106	21	20%	17	1	6%	32	6	19%	20	3	15%
guidelines	4th Line	25	2	8%	6	1	17%	7	1	14%	4	1	25%

Table 5. Relative Costs by NCCN Compliance and Line of Therapy

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			COMMERCIAL n=2,539	MEDICAID n=156	MEDICARE n=1,521	TRACE n=1,074
		1st Line	80.2%	50.4%	82.8%	81.6%
	Compliant	2nd Line	18.6%	44.4%	16.1%	17.0%
Percentage of cancer-related costs for patients compliant to NCCN Guidelines	Compliant	3rd Line	1.0%	1.4%	0.9%	1.4%
		4th Line	0.2%	3.7%	0.2%	0%
		1st Line	71.5%	64.3%	81.6%	87.7%
	Non Compliant	2nd Line	15.6%	21.3%	10.3%	4.9%
	Non Comptiant	3rd Line	10.9%	12.2%	7.3%	4.4%
		4th Line	2.0%	2.1%	0.9%	3.0%

Conclusion

- The results show that differences in time from diagnosis to treatment exist among the four groups, with the longest time shown in the Medicaid and the shortest in the TRACE group
- Reducing differences in time to treatment found in this study may lead to improved health outcomes in the CRC population
- Variations in treatment patterns suggests active monitoring of key metrics (CRC prevalence, NCCN compliance, and time-to-treatment) may
 provide both clinical benefits and cost savings opportunities

Limitations

- Variable follow up durations may lead to more complete data in early phases of treatment and less complete data in late phases of treatment
- Medicare, Medicaid and commercial health plans have different reimbursement regulations, which limits cost comparisons between lines of business
- Analysis is based on real world claims data. Services performed but not billed are not captured in the data. This may include physician samples for pharmaceutical products or services performed pro bono.
- No data validation of claims data was preformed beyond those required for adjudication. Differences between actual care and billed care may exist.

Disclosures

• This study was conducted by Magellan Rx Management, Scottsdale, AZ, and sponsored by Bayer Healthcare Pharmaceuticals, Whippany, NJ.