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Appendix Table 1. Characteristics and Outcomes of Medicare Beneficiaries By Setting, January 2015 – December 2021

	All	Carrier Setting	Outpatient Setting	Inpatient Setting
N	823,575	447,499	313,175	62,901
ERCP Year, %				
2015	14.57	14.9	13.99	15.14
2016	15.07	15.23	14.62	16.27
2017	14.87	14.9	14.68	15.61
2018	14.66	14.61	14.69	14.87
2019	14.68	14.67	14.84	14.05
2020	13.07	12.95	13.41	12.19
2021	13.07	12.74	13.79	11.89
Age at ERCP, %				
0-64	13.62	13.02	14.39	13.97
65-74	38.70	36.36	42.15	38.17
75-84	31.40	31.79	30.89	31.26
85-94	15.06	17.26	11.86	15.32
95-105	1.22	1.57	0.71	1.28
Female, %	52.65	52.34	53.09	52.71
Race, %				
Unknown/ Missing	3.54	3.52	3.62	3.34
White	83.44	82.72	84.85	81.57
Black	6.95	7.2	6.18	9.01
Asian	2.69	2.84	2.52	2.44
Hispanic	2.53	2.8	2.12	2.76
North American Native	0.83	0.91	0.71	0.88

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	All	**Carrier Setting**	**Outpatient Setting**	**Inpatient Setting**
Emergency Department / Urgent ERCP, %	8.32	3.88	2.5	68.89
Hospitalized 30 days prior to ERCP	53.31	75.49	12.75	97.46
Cancer at ERCP	11.48	7.84	13.98	24.96
Pancreatitis or biliary infection at the time of ERCP	80.61	81.16	79.34	83.06
Infection at time of ERCP	4.02	1.62	2.72	27.54
Post-ERCP pancreatitis at the time of ERCP	1.78	1.48	1.77	3.97
Chronic conditions, %				
0	2.63	2.85	2.46	1.95
1-5	28.38	26.79	30.93	27.03
6-10	46.13	45.24	47.5	45.6
11-15	21.36	23.3	18.13	23.6
16+	1.50	1.81	0.98	1.82
Setting, %				
Carrier	54.34	100	0	0
Inpatient	7.64	0	0	100
Outpatient	38.03	0	100	0
Disposable scope	0.09	0	0.22	0.02
Outcomes, %				
Infection within 7 days of ERCP	3.53	5.2	1.29	2.85
Infection within 30 days of ERCP	7.71	10.09	4.15	8.42
Non-elective hospitalization within 7 days of ERCP	8.94	13.13	3.41	6.67

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	All	**Carrier Setting**	**Outpatient Setting**	**Inpatient Setting**
Non-elective hospitalization within 30 days of ERCP	16.85	22.25	9.04	17.29
Post-ERCP pancreatitis within 7 days of ERCP	0.46	0.63	0.25	0.3

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Appendix Table 2. Odds Ratio of 7-day Infection after ERCP by Medicare Setting

	All (same OR as main manuscript)	Inpatient	Outpatient	Carrier
Event, %	3.5%	2.9%	1.3%	5.2%
Age at ERCP vs 65-74				
0-64	1.01 (0.97 - 1.05)	1.28 (1.11 - 1.47)	1.03 (0.93 - 1.14)	0.98 (0.94 - 1.03)
75-84	1.06 (1.03 - 1.09)	0.88 (0.78 - 0.99)	0.95 (0.88 - 1.03)	1.04 (1.01 - 1.08)
85-94	1.20 (1.16 - 1.25)	0.71 (0.60 - 0.83)	0.99 (0.89 - 1.10)	1.12 (1.08 - 1.17)
95-105	1.51 (1.38 - 1.67)	0.68 (0.42 - 1.10)	0.90 (0.62 - 1.32)	1.31 (1.18 - 1.46)
Race vs White				
Other/Unknown	1.16 (1.09 - 1.23)	1.15 (0.90 - 1.48)	1.14 (0.97 - 1.33)	1.08 (1.00 - 1.16)
Black	1.10 (1.05 - 1.15)	1.30 (1.13 - 1.51)	1.13 (1.00 - 1.28)	1.02 (0.97 - 1.08)
Asian/Pacific Islander	1.39 (1.31 - 1.48)	1.50 (1.16 - 1.95)	1.42 (1.20 - 1.68)	1.20 (1.12 - 1.30)
Hispanic	1.08 (1.00 - 1.16)	1.00 (0.74 - 1.33)	1.30 (1.07 - 1.58)	0.92 (0.84 - 1.00)
North American Native/Native American	1.02 (0.89 - 1.16)	1.28 (0.80 - 2.03)	0.80 (0.52 - 1.23)	0.84 (0.72 - 0.98)
Male vs Female	1.26 (1.23 - 1.29)	1.19 (1.08 - 1.31)	1.26 (1.18 - 1.34)	1.27 (1.23 - 1.30)
Year of ERCP vs 2015				
2016	0.87 (0.83 - 0.92)	0.94 (0.77 - 1.14)	0.88 (0.77 - 1.01)	0.85 (0.80 - 0.91)
2017	0.91 (0.87 - 0.96)	0.82 (0.67 - 1.00)	0.96 (0.85 - 1.10)	0.91 (0.86 - 0.97)
2018	0.91 (0.87 - 0.96)	0.92 (0.75 - 1.12)	0.90 (0.79 - 1.03)	0.92 (0.86 - 0.97)
2019	0.91 (0.86 - 0.96)	1.01 (0.83 - 1.23)	0.94 (0.83 - 1.07)	0.90 (0.85 - 0.96)
2020	0.88 (0.84 - 0.93)	0.89 (0.73 - 1.10)	0.87 (0.76 - 1.00)	0.91 (0.86 - 0.97)
2021 (Jan-Apr)	0.89 (0.84 - 0.93)	0.85 (0.69 - 1.06)	0.91 (0.79 - 1.04)	0.93 (0.87 - 0.99)
Hospitalized 30 days prior to ERCP	0.37 (0.36 - 0.38)	0.74 (0.58 - 0.95)	1.76 (1.64 - 1.90)	0.14 (0.13 - 0.14)
Chronic Conditions vs 0				
1-5	1.02 (0.94 - 1.10)	1.26 (0.82 - 1.93)	1.06 (0.84 - 1.34)	1.31 (1.20 - 1.44)
6-10	1.27 (1.17 - 1.37)	1.60 (1.04 - 2.45)	1.32 (1.05 - 1.67)	1.77 (1.62 - 1.94)
11-15	1.54 (1.42 - 1.68)	2.01 (1.30 - 3.11)	1.73 (1.36 - 2.20)	2.17 (1.97 - 2.38)
16+	1.88 (1.68 - 2.12)	2.29 (1.35 - 3.90)	2.39 (1.71 - 3.35)	2.65 (2.32 - 3.02)
Cancer at time of ERCP	1.02 (0.98 - 1.06)	1.56 (1.40 - 1.73)	2.25 (2.09 - 2.42)	1.13 (1.07 - 1.19)
Pancreatitis or biliary condition at time of ERCP	1.13 (1.09 - 1.18)	0.81 (0.70 - 0.94)	0.99 (0.91 - 1.09)	1.16 (1.11 - 1.21)
Infection at time of ERCP	1.13 (1.07 - 1.19)	1.48 (1.34 - 1.63)	1.93 (1.67 - 2.21)	2.84 (2.62 - 3.08)
Urgent* ERCP	3.30 (3.20 - 3.40)	1.03 (0.93 - 1.14)	1.24 (1.03 - 1.48)	2.75 (2.65 - 2.87)
Disposable duodenoscope	0.32 (0.17 - 0.60)	2.38 (0.31 - 18.60)	1.02 (0.53 - 1.98)	NA**

*Emergency department claim on the same claim as the ERCP

**NA, not applicable because no disposable scopes used in this setting

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Appendix Table 3. Odds of All cause Hospitalizations and Post-ERCP pancreatitis after ERCP in Medicare, 2015-2021

	7-day All cause hospitalization	30-day All cause hospitalization	Post-ERCP pancreatitis within 7 days
Event, %	8.9%	16.8%	0.5%
Age at ERCP vs 65-74			
0-64	1.03 (1.00 - 1.05)	1.16 (1.14 - 1.19)	1.16 (1.14 - 1.19)
75-84	1.04 (1.02 - 1.06)	0.94 (0.93 - 0.95)	0.94 (0.93 - 0.95)
85-94	1.12 (1.10 - 1.15)	0.91 (0.89 - 0.92)	0.91 (0.89 - 0.92)
95-105	1.30 (1.21 - 1.39)	0.97 (0.92 - 1.02)	0.97 (0.92 - 1.02)
Race vs White			
Other/Unknown	1.07 (1.02 - 1.11)	1.06 (1.03 - 1.10)	1.06 (1.03 - 1.10)
Black	1.01 (0.98 - 1.04)	1.14 (1.11 - 1.16)	1.14 (1.11 - 1.16)
Asian/Pacific Islander	1.06 (1.01 - 1.11)	1.07 (1.03 - 1.11)	1.07 (1.03 - 1.11)
Hispanic	0.94 (0.89 - 0.99)	0.98 (0.95 - 1.02)	0.98 (0.95 - 1.02)
North American Native/Native American	0.89 (0.82 - 0.98)	0.89 (0.83 - 0.95)	0.89 (0.83 - 0.95)
Male vs Female	1.07 (1.06 - 1.09)	1.11 (1.10 - 1.13)	1.11 (1.10 - 1.13)
Year of ERCP vs 2015			
2016	0.94 (0.91 - 0.97)	0.97 (0.95 - 1.00)	0.97 (0.95 - 1.00)
2017	0.95 (0.92 - 0.99)	0.99 (0.96 - 1.01)	0.99 (0.96 - 1.01)
2018	0.97 (0.94 - 1.00)	0.99 (0.96 - 1.01)	0.99 (0.96 - 1.01)
2019	0.98 (0.95 - 1.02)	0.99 (0.97 - 1.02)	0.99 (0.97 - 1.02)
2020	0.94 (0.91 - 0.97)	0.97 (0.94 - 0.99)	0.97 (0.94 - 0.99)
2021 (Jan-Apr)	0.95 (0.92 - 0.98)	0.96 (0.94 - 0.99)	0.96 (0.94 - 0.99)
Hospitalized 30 days prior to ERCP	0.32 (0.31 - 0.32)	0.82 (0.81 - 0.83)	0.82 (0.81 - 0.83)
Chronic Conditions vs 0			
1-5	0.98 (0.93 - 1.03)	1.08 (1.03 - 1.12)	1.08 (1.03 - 1.12)
6-10	1.03 (0.98 - 1.08)	1.25 (1.20 - 1.30)	1.25 (1.20 - 1.30)
11-15	1.14 (1.08 - 1.20)	1.52 (1.46 - 1.58)	1.52 (1.46 - 1.58)
16+	1.27 (1.17 - 1.38)	1.89 (1.79 - 2.01)	1.89 (1.79 - 2.01)
Cancer at time of ERCP	0.92 (0.90 - 0.94)	1.37 (1.34 - 1.39)	1.37 (1.34 - 1.39)
Pancreatitis or biliary condition at time of ERCP	1.11 (1.08 - 1.14)	1.00 (0.98 - 1.01)	1.00 (0.98 - 1.01)
Infection at time of ERCP	0.52 (0.49 - 0.54)	0.67 (0.64 - 0.69)	0.67 (0.64 - 0.69)
Urgent ERCP	5.22 (5.11 - 5.33)	2.75 (2.70 - 2.80)	2.75 (2.70 - 2.80)
Disposable duodenoscope	0.23 (0.15 - 0.36)	0.51 (0.40 - 0.66)	0.51 (0.40 - 0.66)

*Emergency department claim on the same claim as the ERCP