Provider Contribution to Overuse and Underuse of Colorectal Cancer Screening (mostly colonoscopy)

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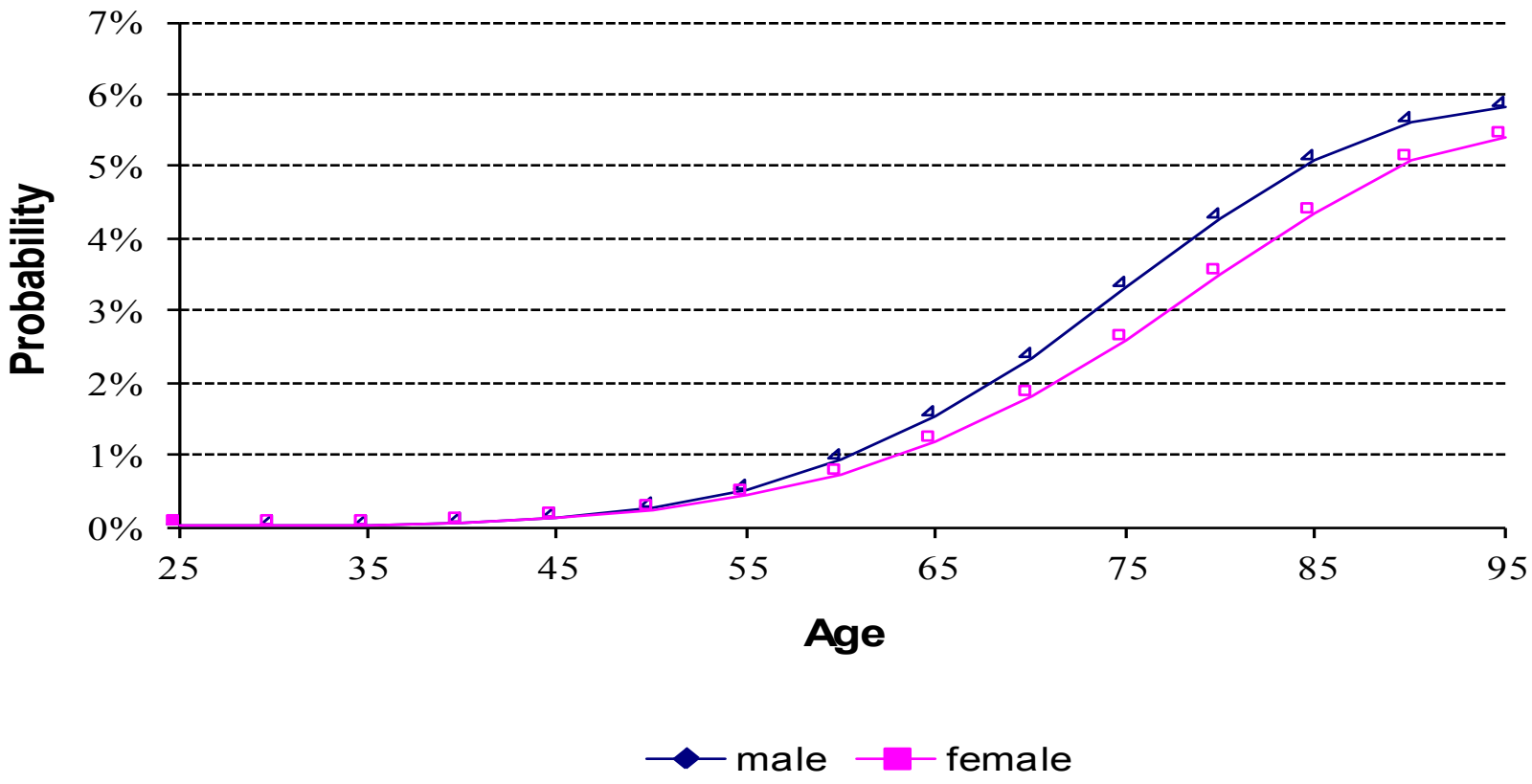
Messages

It is possible to measure provider performance in both underuse and overuse of CRC screening — using Medicare Data.

There is considerable variation among providers, which is stable over time.

Life Time Risk of Developing Colo-rectal Cancer
U.S. SEER Registry Data



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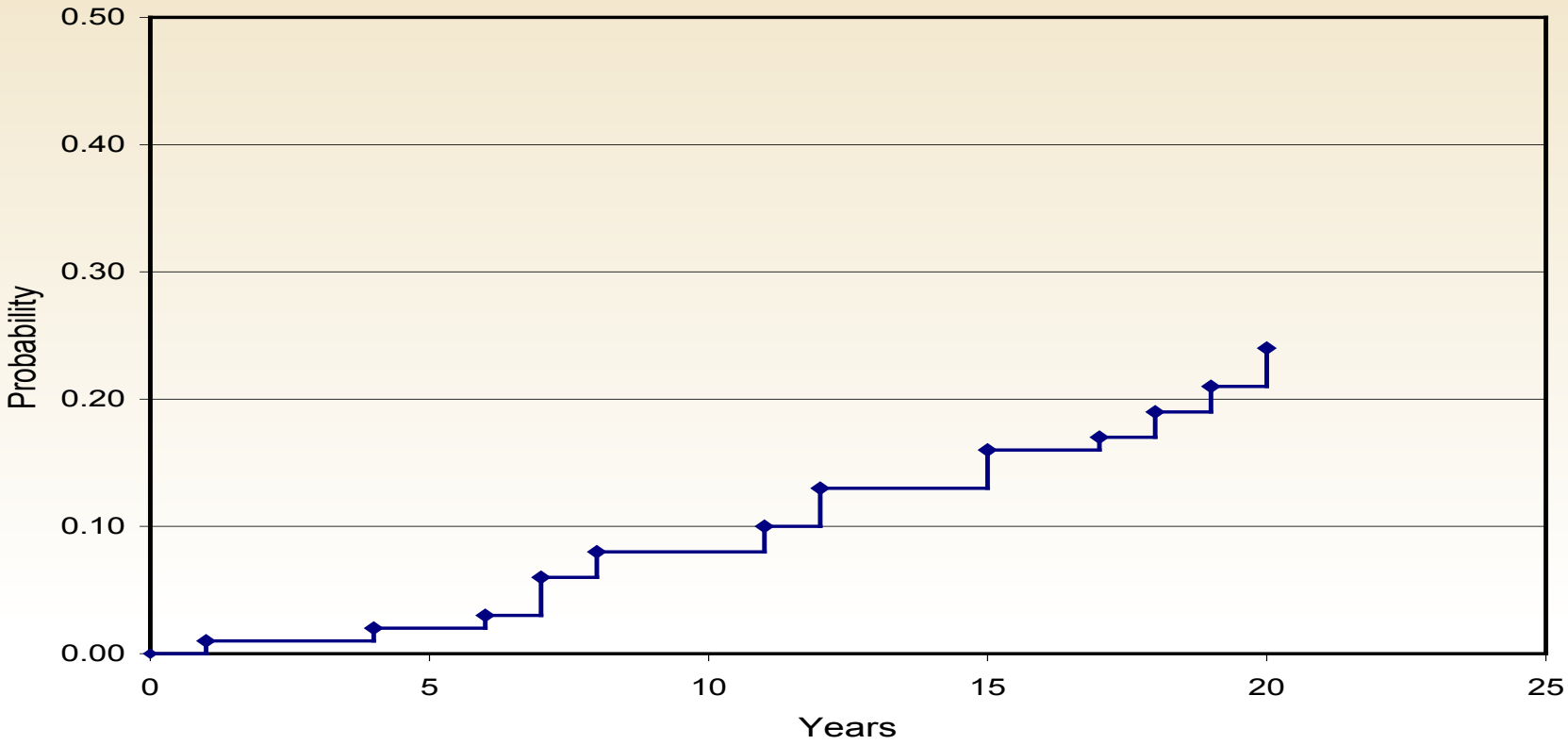
Cumulative risk of cancer Dx during follow-up of unresected polyp ≥ 10mm in size



(Stryker et al. Gastroenterology 1987; 93:1009-13)

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Role of PCP in ethnic disparities in receipt of CRC screening

Approach

- 100% Texas Medicare files 2000-2009
- Identify patients “up to date” in CRC screening in 2009
  - Fecal occult blood test in 2009
  - Sigmoidoscopy or double contrast barium enema in 2005-2009
  - Colonoscopy in 2000-2009
- Assess black/white and Hispanic/non-Hispanic white differences in being up to date, and effect of having a PCP and PCP characteristics

Adjusted rates of being up to date with colorectal cancer screening by ethnicity, for the entire cohort, for those with a primary care physician, and for those with a primary care physician adjusted for clustering within primary care physicians

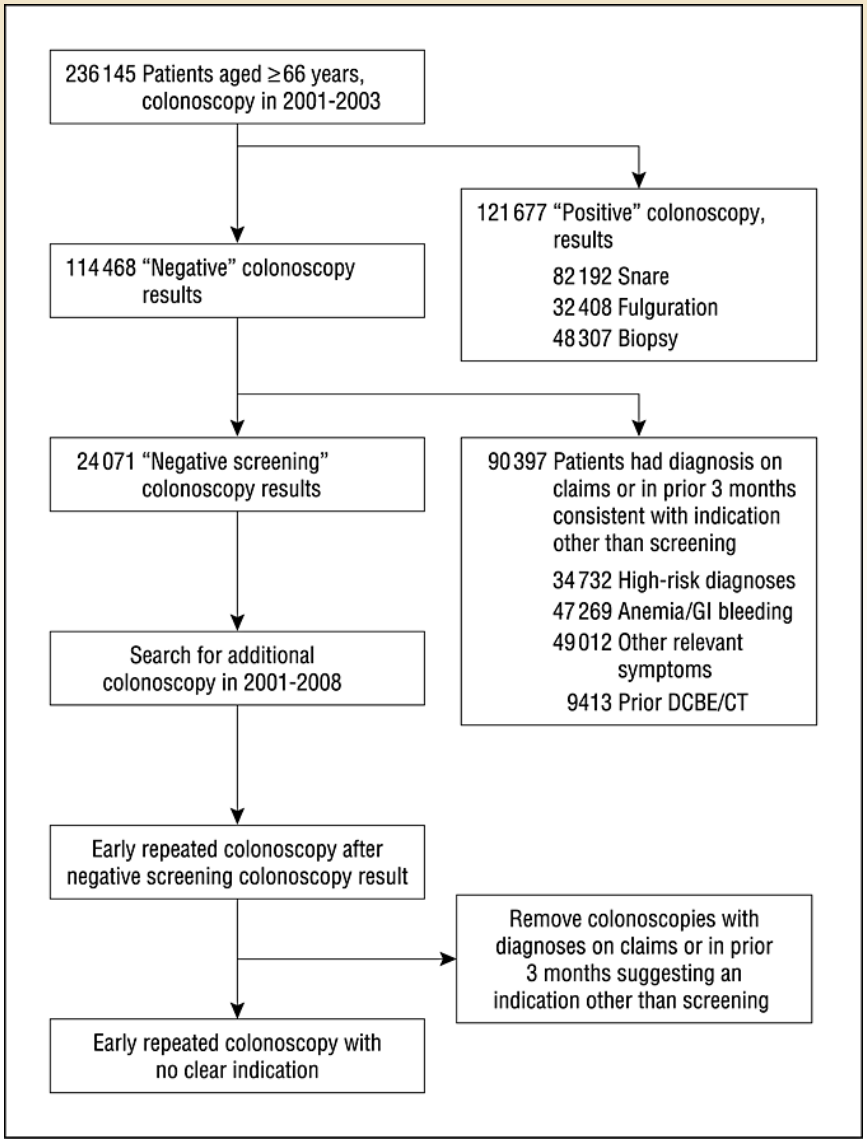
	Whole cohort		Those with a PCP† (Stratified Model)		Those with a PCP† (Multilevel Model)	
Beneficiary number	660,308		357,289		264,066	
	Adjusted Rate (95% CI)	Diff. from Whites	Adjusted Rate (95% CI)	Diff. from Whites	Adjusted Rate (95% CI)	Diff. from Whites
White	50.4 (50.2, 50.5)		59.9 (59.7, 60.1)		57.7 (57.3, 58.1)	
Black	43.4(42.9, 43.9)	7.0	57.0 (56.3, 57.7)	2.9	56.7 (55.7, 57.6)	1.0
Hispanic	39.5 (39.1, 39.9)	10.9	51.0 (50.5, 51.5)	8.9	51.9 (51.1, 52.7)	5.8

(Singal et al. HSR, in press)

Overuse of screening colonoscopy: Background

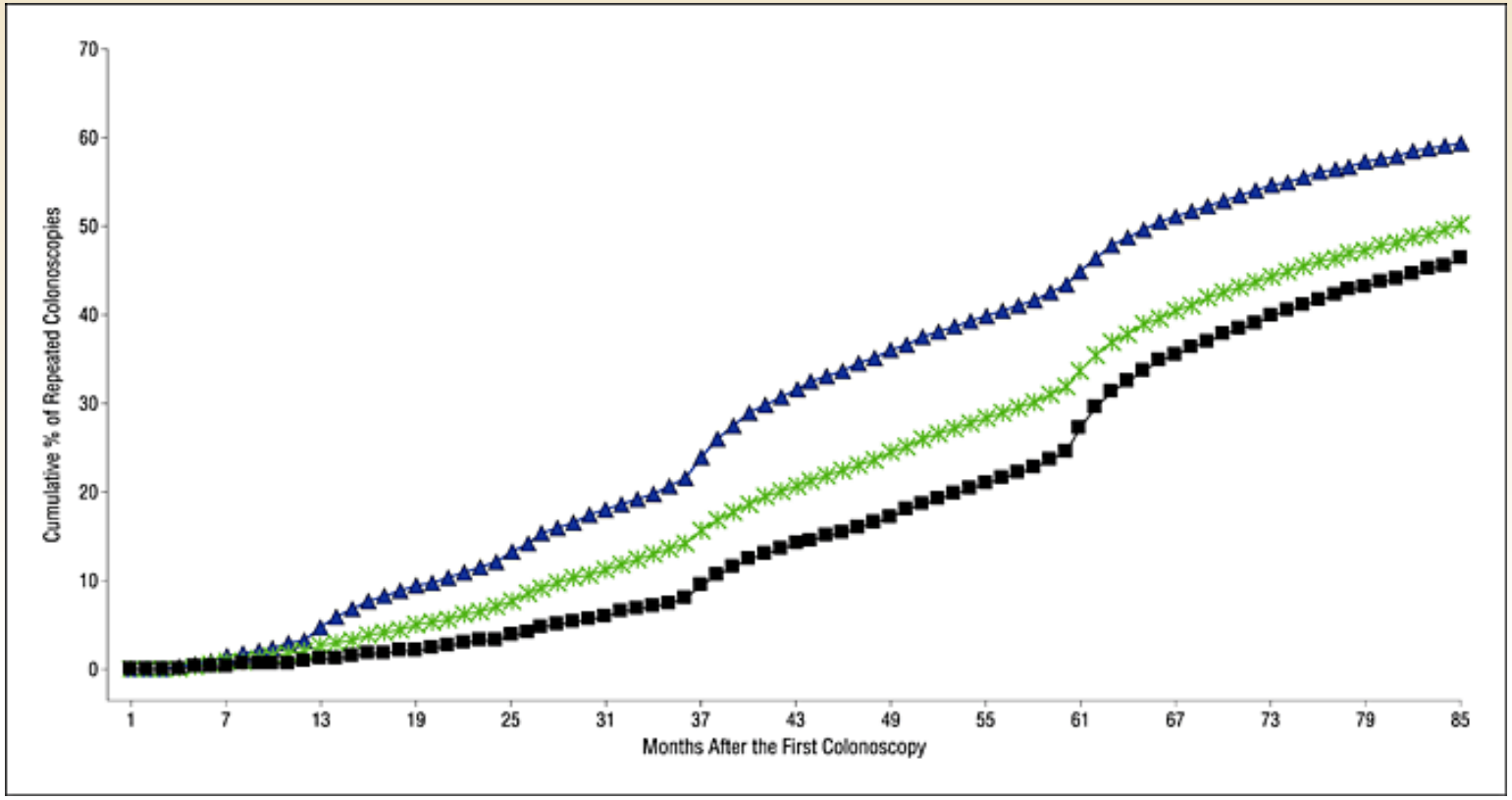
- Most expert panels recommend repeat colonoscopy in 10 years in patients with normal colonoscopy
- Surveys indicate that many physicians recommend shorter screening intervals
- No population based data on over-utilization of colonoscopy
- We assessed the extent to which men and women with a normal screening colonoscopy underwent a repeat screening colonoscopy within 7 years.

Schema for selection of study cohorts



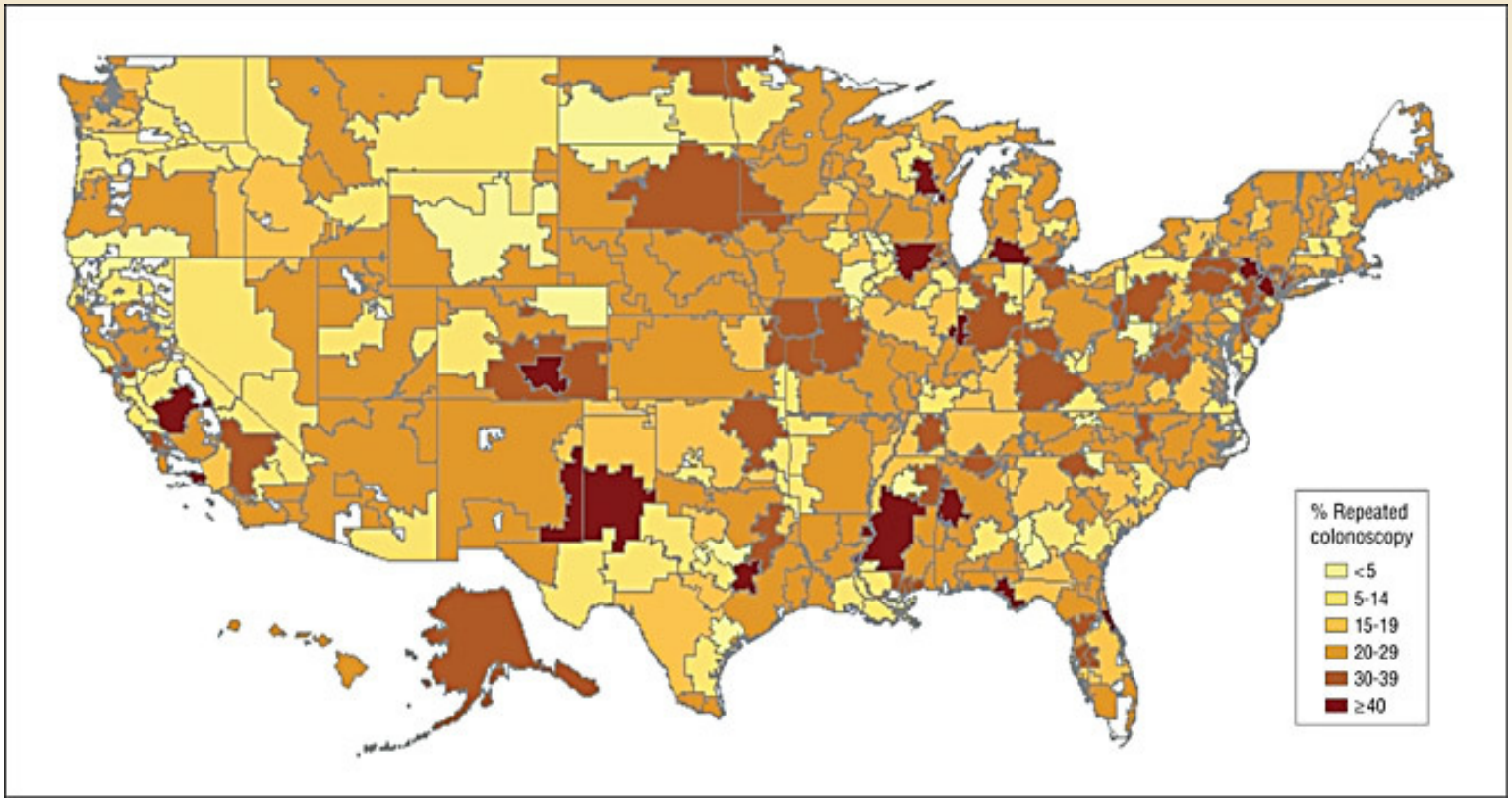
Goodwin, J. S. et al. Arch Intern Med 2011;171:1335-1343.00

Cumulative percentage of repeat colonoscopies for patients 66 years or older who underwent a colonoscopy between 2001 and 2003



(Goodwin, J.S. et al. Arch Intern Med 2011;171:1335-1343)

Percentage of Medicare fee-for-service who underwent early repeat colonoscopy with no clear indication, by health referral region



(Goodwin, J. S. et al. Arch Intern Med 2011;171:1335-1343)

Next: Role of the colonoscopy provider in overuse of screening colonoscopy

Methods

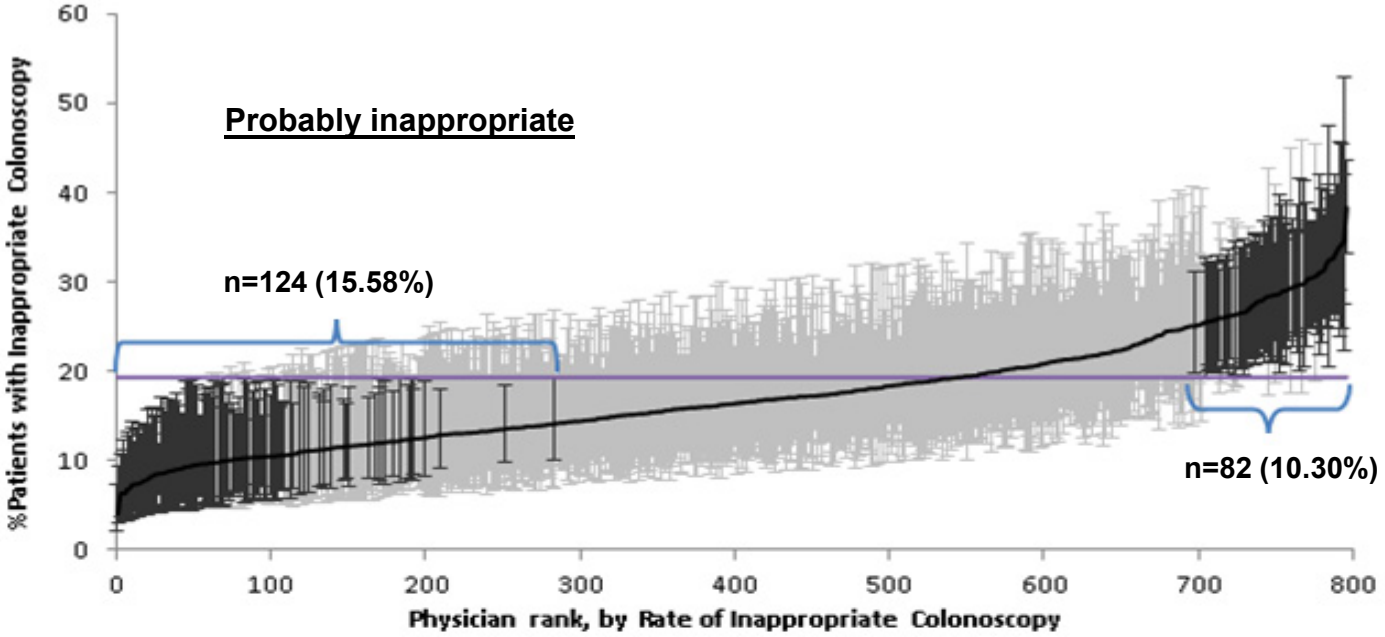
- Identify Texas Medicare recipients aged 70+ who received colonoscopy in 10/1/08 to 9/31/09.
- Identify those colonoscopies judged to be potentially inappropriate.
  - Early repeat screening
  - Age 75+ screening
- Examine the percent of potentially inappropriate colonoscopies as a percent of all colonoscopies for each provider

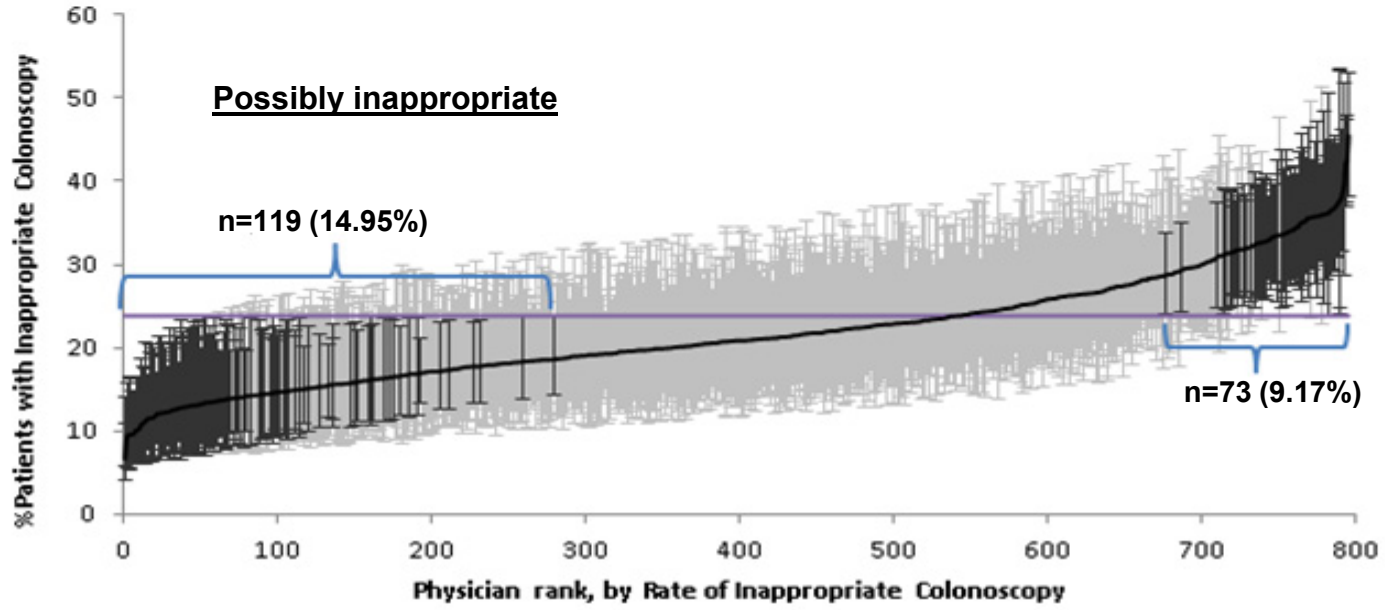
Percentage of inappropriate colonoscopies in Texas, by age of the recipient

Age	Possibly inappropriate	Probably inappropriate
70-75	9.8%	7.8%
76-85	38.8%	31.7%
85+	24.9%	17.3%

Factors associated with risk of inappropriate colonoscopy

	Odds Ratio
Male	1.19 (1.14, 1.24)
High comorbidity (vs. no)	0.54 (0.51, 0.57)
High education	0.86 (0.81, 0.91)
Non metropolitan	0.85 (0.81, 0.91)
Ambulatory Surgical Center (vs. hospital bed)	1.23 (1.16, 1.30)
Office	1.57 (1.22, 2.01)
Surgeon (vs. gastroenterologist)	1.28 (1.16, 1.40)
Generalist	1.37 (1.20, 1.53)
Provider Volume	
<65 colonoscopies/year	1.00
65-115	1.25 (1.14, 1.37)
115-175	1.38 (1.25, 1.52)
>175	1.70 (1.51, 1.90)


Probably inappropriate
n=124 (15.58%)
n=82 (10.30%)
%Patients with Inappropriate Colonoscopy
Physician rank, by Rate of Inappropriate Colonoscopy
0
10
20
30
40
50
60
0
100
200
300
400
500
600
700
800


Possibly inappropriate
n=119 (14.95%)
n=73 (9.17%)
%Patients with Inappropriate Colonoscopy
Physician rank, by Rate of Inappropriate Colonoscopy
0
10
20
30
40
50
60
0
100
200
300
400
500
600
700
800

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Comparison of colonoscopists with low and high rates of inappropriate colonoscopies

Variables	Physicians with low rate of inappropriate	Physicians with high rate of inappropriate colonoscopy	P value
Sex			
Male	87.8%	97.2%	0.02
Specialty			
Gastroenterology	9.6%	77.5%	0.03
Surgery	8.5%	21.1%	
Generalist	1.9%	1.4%	
Year of medical school graduation			
<1980	14.3%	32.9%	<.0001
1980-<1990	15.2%	35.7%	
1990-<2000	41.0%	31.4%	
2000+	30.0%	0%	
Location of medical school			
United States	53.3%	93.0%	<.0001
Outside of United States	46.7%	7.0%	
Colonoscopy volume (mean, SD)	99.2 59.1	175.5 81.1	<.0001

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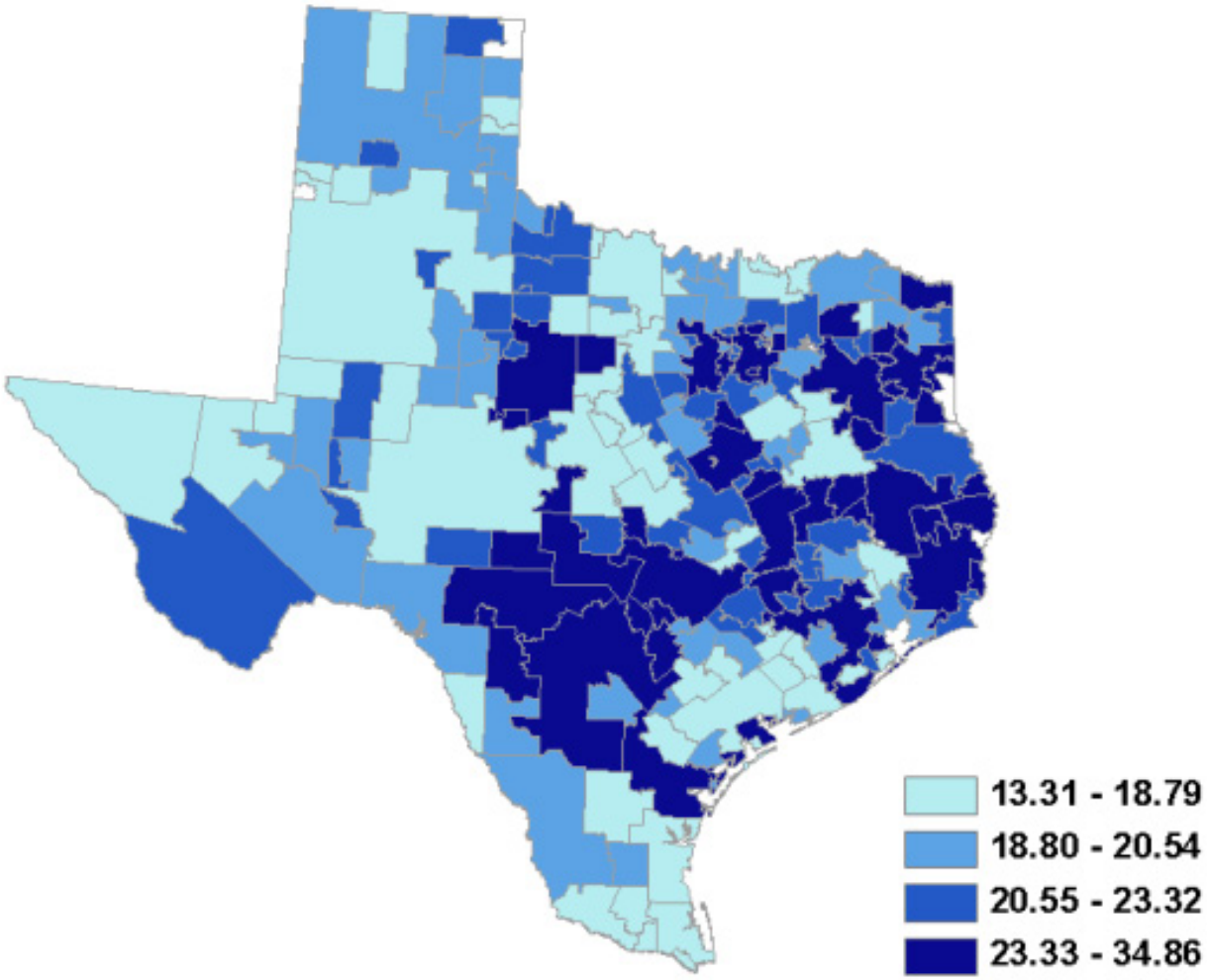
Inappropriate colonoscopy rate in Texas HSAs



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Final thoughts

- Medicare data cannot determine whether any particular colonoscopy was appropriate or inappropriate.
- These data can show patterns, however, that strongly suggest some providers and some geographic areas have high percentages of probably inappropriate colonoscopies.
- Such findings could trigger chart audits, for example, to further explore the issue.