



May 15, 2017

## Every Man and Woman Over The Age of 50 **MUST** read this report from Citron Research.

Citron Research exposes Exact Sciences (NASDAQ:EXAS) and **PROVES** beyond ANY doubt why this stock will soon be cut in half.

***Short term target: \$20.***

***3 to 5 Years: Likely Single Digit, Potential 0.***

Citron has had great success over the past 10 years exposing companies whose business model has been to take advantage of a “broken healthcare system” but this case is unique. Most times we see this pattern:

- A company strategy of exploiting Medicare
- Making Money, Money, and More Money
- Marketing a unique product (FDA license or orphan drug, etc.)
- Dedicated shareholder base
- No catalyst for change absent a congressional hearing.

For Exact Sciences (NASDAQ:EXAS), the situation is the complete opposite

Exact Sciences pushes a cancer test (Cologuard) to the public, inferior by its own admission, and **loses money** doing it. That is why this \$4 billion company is mainly owned by passive investing ETFs or other healthcare baskets.

More importantly, as Citron will expose, the key metrics not disclosed by Exact Sciences are getting worse, while Medicare pricing inefficiencies end next January and investors will be left with a decaying asset with no terminal value.



## How Did We Get Here?? Meet Cologuard: A Seriously Inferior Product and a Disastrous Business Model

Cologuard is a branded laboratory-based scan for DNA traces in stool samples indicating colorectal cancer. In a move that surprised many, and despite its lack of effectiveness, Cologuard was approved by the FDA and for Medicare reimbursement in 2014. This was ostensibly to encourage some sort of screening by the significant portion of the general public who are reluctant to have routine colonoscopy, which is the recommended standard of care. Then, due to a little-known **loophole** in Obamacare, it became obligatory for insurance reimbursement for certain classes of “approved list” diagnostics – even if they aren’t standard of care. And with that, Exact Sciences was off to the races.

### **Cologuard is Not the Standard of Care for Colon Cancer Screening. And There’s a Good Reason for that.**

Exact Sciences markets (aggressively, to end user consumers) a “poop in a box” test for colorectal cancer, the rationale being that is less fear-inducing for many people than colonoscopy. So, as crazy as this might sound, a \$4 billion company exists because some men think they are “too cool” (or too scared) to get a colonoscopy, despite the real dangers of colon cancer.

If anyone remembers Valeant’s Jublia, the overpriced toe fungus treatment that was marketed directly to consumers, then Cologuard should truly offend you. Colorectal cancer is a lot more dangerous than toenail fungus. The strategy of direct-to-public advertising places Exact Sciences in the role of endangering potential colonoscopy patients, by encouraging them to not accept their own doctors’ guidance.

Unlike anything we have ever seen before, Exact Science **admits** its product is inferior to both less expensive tests **and** the standard of care.

As published in Gastro Journal in 2106, these are the results of the test on Cologuard from a study conducted at Stanford University Medical Center. (MT-sDNA is the clinical term for Cologuard):

**“In a Markov model, we found FIT and colonoscopy to be more effective and less costly than the MT-sDNA test when participation rates were equal for all strategies.**

[http://www.gastrojournal.org/article/S0016-5085\(16\)34617-0/abstract](http://www.gastrojournal.org/article/S0016-5085(16)34617-0/abstract)

What’s particularly shocking about this study is that **Exact Sciences funded it!** They rolled the dice to hopefully get a positive study and they lost, and now they try to pretend investors and insurance companies won’t notice the truth.

## **It Gets Worse For The “Science” that is not Exact.**

**United Healthcare**, the largest managed healthcare company in the United States who is a thought leader in diagnostics declared last month:

**“Fecal DNA testing for colorectal cancer screening and/or monitoring is unproven and not medically necessary.** There is insufficient published evidence in the clinical literature supporting the diagnostic accuracy of fecal DNA tests to screen for colorectal cancer in asymptomatic, average-risk patients. The gold standard for colorectal cancer screening is optical colonoscopy. There is insufficient published evidence comparing fecal DNA testing to optical colonoscopy. **In fact, there is insufficient published clinical evidence that fecal DNA testing reduces the likelihood of mortality from colorectal cancer.**

[https://www.unitedhealthcareonline.com/ccmcontent/ProviderII/UHC/en-US/Assets/ProviderStaticFiles/ProviderStaticFilesPdf/Tools%20and%20Resources/Policies%20and%20Protocols/Medical%20Policies/Medical%20Policies/Fecal\\_DNA\\_Testing.pdf](https://www.unitedhealthcareonline.com/ccmcontent/ProviderII/UHC/en-US/Assets/ProviderStaticFiles/ProviderStaticFilesPdf/Tools%20and%20Resources/Policies%20and%20Protocols/Medical%20Policies/Medical%20Policies/Fecal_DNA_Testing.pdf)

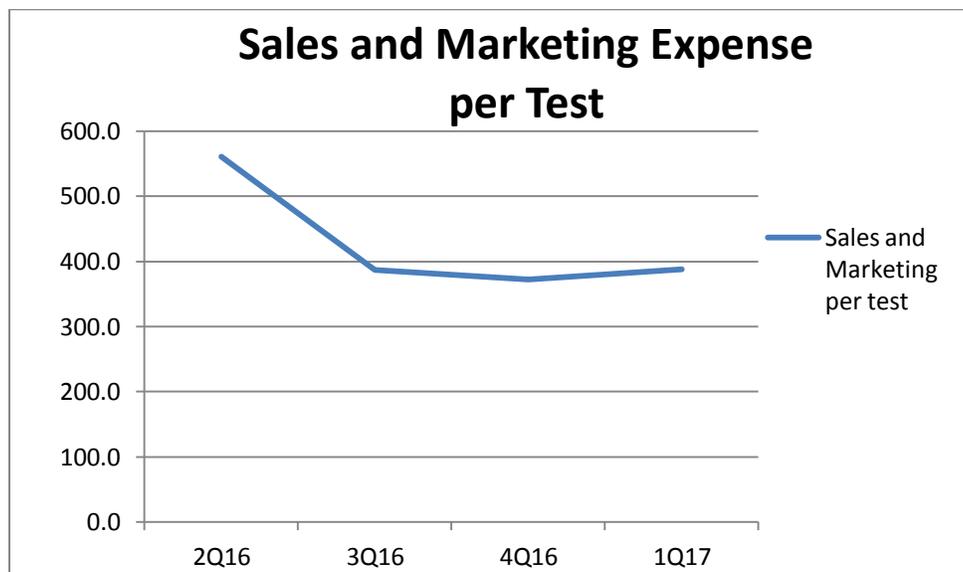
It should be noted in healthcare that United’s Optum business is the gold standard of assessing costs benefit of a procedure in a “big data” population health framework. It should come as no surprise their conclusion aligned with the company’s own study.

***When the nation’s largest managed care provider refuses to reimburse for what it considers to be an inferior and not cost effective diagnostic method for colorectal cancer, how in the world can Exact ever grow into profitability?***

## The costs of selling inferior technology-- and Proof the Model is imploding NOW.

The company put up a lot of noise this quarter because it announced 100,000 tests for the first time. But look at the unsustainable acquisition costs for its growth:

	2Q16	3Q16	4Q16	1Q17
<b>Sales and Marketing Expense</b>	<b>30,301,000</b>	<b>26,308,000</b>	<b>30,506,000</b>	<b>38,800,000</b>
Test Volume	54,000	68,000	82,000	100,000
New tests	14,000	14,000	14,000	18,000
Incremental sales/mktg per test	327.86	-285.21	299.86	460.78
<b>Sales and Marketing per test</b>	<b>561.1</b>	<b>386.9</b>	<b>372.0</b>	<b>388.0</b>
Doctors	41,000	50,000	60,000	70,000
New doctors	9,000	9,000	10,000	10,000
Incremental Sales/Mktg per new doctor	510	-443.67	419.8	<b>829.4</b>



Where is the leverage? With Medicare reimbursement now fully pipelined, **sales and marketing cost per test should be plummeting**, demonstrating the company's ability to accrue leverage from its huge marketing push.

**But it's not. The numbers show sales and marketing per test has bottomed, and may in fact be climbing again.**

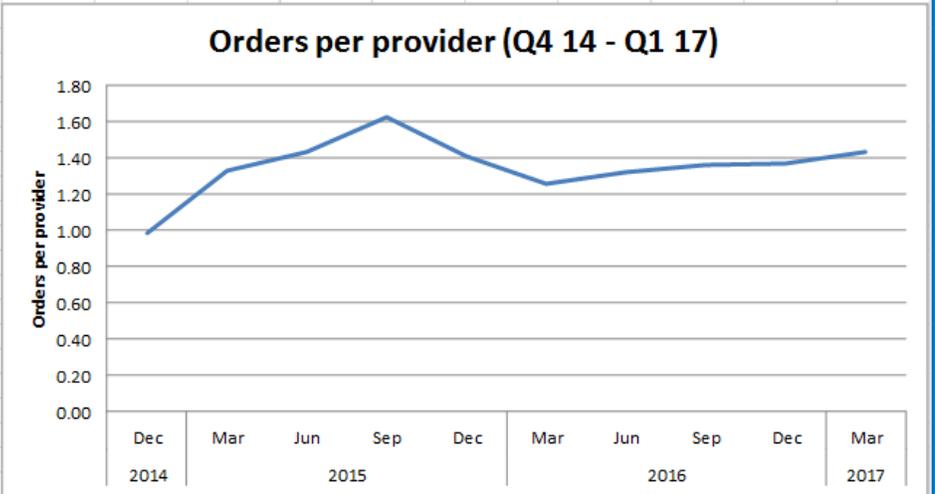
**\*Note:** We could write another page about how their shift to accrual accounting helped juice up the quarter but the story is so much bigger than that.

**Citron Now exposes the most devastating number for Exact's future:**

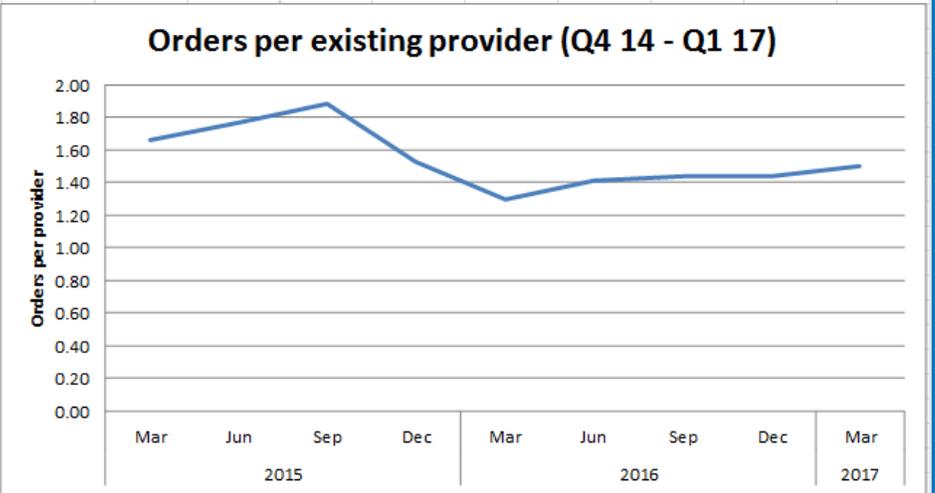
## **Prescriptions per Physician.**

**1.4** orders per physician per quarter is the number, and it has been in flat line for the last two years! This key metric is not disclosed by Exact; Citron has used the company's financials to back out this critical measurement. Here's our homework:

	2014	2015				2016				2017
	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar
Cologuard test volumes	4,024	11,000	21,050	34,000	38,000	40,000	54,000	68,000	82,000	100,000
Ordering providers	4,100	8,300	14,700	21,000	27,000	32,000	41,000	50,000	60,000	70,000
Volume/provider	0.98	1.33	1.43	1.62	1.41	1.25	1.32	1.36	1.37	1.43



	2014	2015				2016				2017
	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar
Cologuard test volumes	4,024	11,000	21,050	34,000	38,000	40,000	54,000	68,000	82,000	100,000
Ordering providers	4,100	8,300	14,700	21,000	27,000	32,000	41,000	50,000	60,000	70,000
New ordering providers	0	4,200	6,400	6,300	6,000	5,000	9,000	9,000	10,000	10,000
Orders per new provider		1	1	1	1	1	1	1	1	1
Total orders from new providers		4,200	6,400	6,300	6,000	5,000	9,000	9,000	10,000	10,000
Total orders from existing providers		6,800	14,650	27,700	32,000	35,000	45,000	59,000	72,000	90,000
Existing providers	4,100	8,300	14,700	21,000	27,000	32,000	41,000	50,000	60,000	60,000
Orders/existing provider		1.66	1.77	1.88	1.52	1.30	1.41	1.44	1.44	1.50

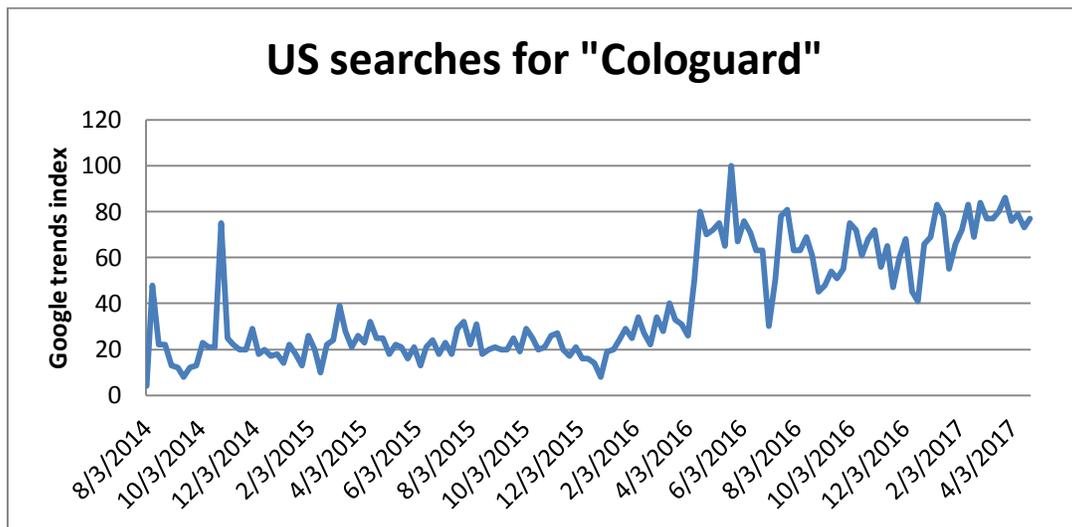


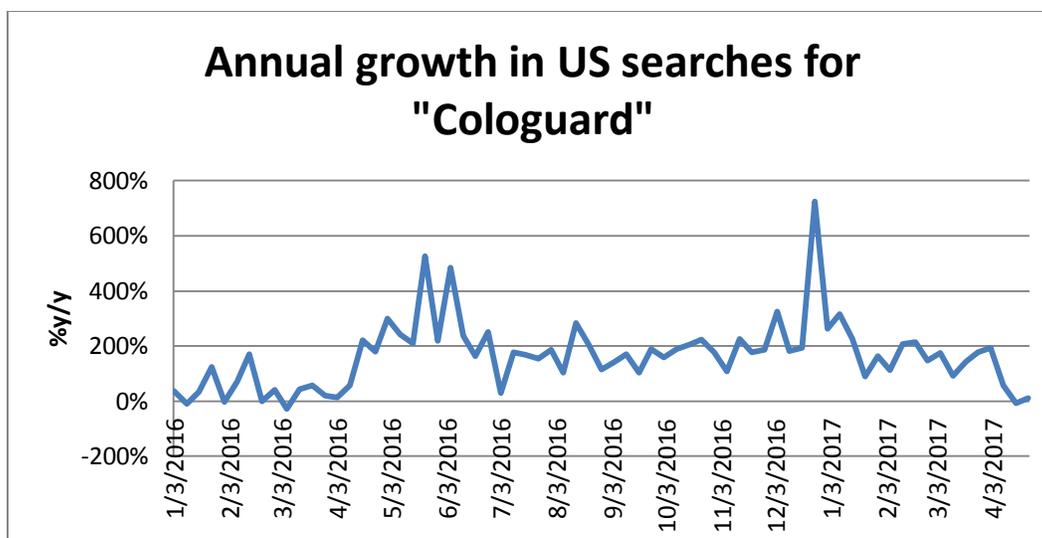
If doctors were each ordering more, this business might become scalable. But, in a reaffirmation in the trust we put in healthcare providers ... despite the millions of dollars spent on sales force and marketing, **doctors are not ordering more Cologuard tests**. Despite over \$223 million in operating expenses to generate \$99 million in revenues, these results show no sign of generating increasing recurring revenues to propel the business toward breakeven.

This number can only get worse, as Exact's sales force has already gone for the low hanging fruit, the most prominent and active 60,000 General Practice Physicians.

Not only is Cologuard failing to gain any leverage with doctors, consumer awareness is not on the rise either. As you can see below from the Google Trends chart, the company started their marketing campaign last spring and searches for Cologuard are still dependant on expensive commercials; there is no market momentum evident in this data.

### Google Trends on Cologuard are Flat



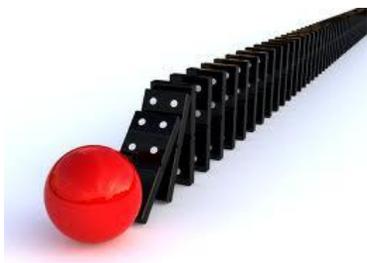


This is the profile of a marketing company simply paying for revenue....What is amazing is Exact could boost revenues another \$100 million or even \$200 million, and it still wouldn't be materially closer to making a profit.

Astoundingly, the super-bullish Cowen analyst who touted this stock last week thinks the company will **scream** higher from their current revenue run rate of \$200 million – he thinks they **might** get to \$700 million by 2019....but even at **350%** of their current run rate, he can't show them making a profit before 2020.

In a simple box, the revenue and unit growth required to get from here to breakeven is over 240% beyond their best quarter ever, and to obtain a reasonable profit, over 400%.

Required Test Volumes for ...	Breakeven	at 20x EPS
Operating Expenses (millions)	275.0	275.0
Required Net Income	0	135.0
Tax Rate	0	30%
Required Pre-Tax Net Income	0	192.9
Required Gross Profit (millions)	275.0	467.9
% Gross Margin	64.9%	64.9%
Required revenue (millions)	423.7	720.9
ASP / test	442	442
Required # of Tests Sold	958,662	1,630,971
2017 Q1 Run Rate Tests Sold	400,000	400,000
Multiple of Unit Volume Increase Req'd	<b>240%</b>	<b>408%</b>



## The Next Catalyst: Medicare Pricing Will Fall Starting in January 2018

From Exact's most recent conference call:

“So the Medicare price in the future will be determined statutorily under the (protecting access to Medicare) [PAMA Act](#), and **that will be based off the median price of the commercial payers**. So there is a mechanism for that price to move and it's by statute, not by any other method. But the bigger point there is that by screening people --- well, right now Medicare pays about 75% of the nearly \$20 billion in treating colon cancer. Colon cancer is one of the most expensive cancers to treat, and Medicare is paying the price for that. We think, over time, the total cost comes down that Medicare pays when you look at screening and treatment combined and obviously, the human impact is significant.”

-- Jeffrey T. Elliott, Exact Sciences CFO

<https://seekingalpha.com/article/4066308-exact-sciences-exas-q1-2017-results-earnings-call-transcript?part=single>

Medicare currently reimburses **\$512** for Cologuard, **way higher** than Exact's ASP per test of **\$442**. Running basic math yields an estimate of the non-Medicare ASP of \$285 to \$350.

As [PAMA](#) takes effect in January 2018, Exact's top-of-the-market Medicare reimbursement rate cannot stand.

To show how low test pricing can go, just refer to Exact's lawsuit against Humana... Exact has filed suit against Humana reimbursement of 4,664 Cologuard tests that Humana deemed “medically unnecessary” [\[Link\]](#)– the same finding that highly prestigious United Healthcare just published.

The lawsuit gives us a key data point – Humana was paying appx \$171.00 per test. Remember, according to PAMA, Medicare pricing will have to conform to the average of non-Medicare pricing starting next year.

So we've done the math for them. They stated on the Q1 cc that their ASP was \$442. Assuming 70% of their revenues comes from Medicare at its current reimbursement rate of \$509 per test, the average insurance reimbursement rate would be \$285.

Even using a high-side \$350 per test reimbursement from Medicare, the Gross Margin drops to %55.1, devastates Exact's breakeven calculation, making its 20x EPS hurdle looks unreachable.

Required Test Volumes for ...	Breakeven	at 20x EPS	post -PAMA	
			Breakeven	at 20x EPS
Operating Expenses (millions)	275.0	275.0	275.0	275.0
Required Net Income	0	135.0	0	135.0
Tax Rate	0	30%	0	30%
Required Pre-Tax Net Income	0	192.9	0	192.9
Required Gross Profit (millions)	275.0	467.9	275.0	467.9
% Gross Margin	64.9%	64.9%	55.1%	55.1%
Required revenue (millions)	423.7	720.9	499.3	849.4
ASP / test	442	442	350	350
Required # of Tests Sold	958,662	1,630,971	1,426,447	2,426,812
2017 Q1 Run Rate Tests Sold	400,000	400,000	400,000	400,000
Multiple of Unit Volume Increase Req'd	<b>240%</b>	<b>408%</b>	<b>357%</b>	<b>607%</b>

**“Note to Exact’s CFO:** If Medicare is 70% of your revenues **(IS IT ?)**, and you know that pricing gets reduced next year -- we just don't know how much -- then how are you moving towards profitability? Are your commercials going to cost 40% less????”  
*-- Andrew Left, Editor, Citron Research*

It doesn't take a brain surgeon to guess, that with all these concerns surrounding the company, **both Insiders and the Company sold stock 6 months ago ... at half the current share price.**

<https://finance.yahoo.com/quote/EXAS/insider-transactions?p=EXAS>

\* To put in perspective how ludicrous the Exact share price is consider this: A few years ago, Myriad (MYGN) established the BRCA gold standard for breast cancer testing, and they reached \$200 mil in sales (a number higher than Exact's current run rate).

	<b>Revenue</b>	<b>Stock Multiple</b>	<b>Financials</b>
<b>Myriad Genetics</b>	\$200 million	6x Revenues	\$65 million income
<b>Exact Sciences</b>	\$190 million (cur run rate)	20x Revenues	Operating Losses as far as the eye can see

## Terminal Value of Exact Science Might be **\$0**

Anyone who follows the landscape of diagnostic cancer testing knows that everything is moving towards blood based DNA testing. Any doctor in the field will tell you it is just a matter of time. Poop in a box will probably be a medical dinosaur in 4 years and the value of Exact's only asset will be 0. While they have an early-stage pipeline of other tests, Exact Sciences is not nearly as funded or dedicated as the many private and public companies that are advancing cancer testing.

While Exact's management was sitting with its creative team brainstorming cute commercials, Jeff Bezos, Bill Gates, and Google were busy funding Grail with \$1 billion to further blood based DNA testing:

<http://medcitynews.com/2017/03/grail-freenome-liquid-biopsies/>

Just last week we saw Softbank backed Guardant raise \$360 million to sequence DNA of a million patients.

<https://venturebeat.com/2017/05/11/cancer-screening-startup-guardant-health-raises-360-million-to-sequence-tumor-dna-of-1-million-patients/>

These are just two of the many companies who will forge the future of cancer testing. Investors in Exact are left with a \$4 billion poop-in-a-box company ... that loses money.

“If Valeant went away tomorrow, a lot of people would still depend on their products. While their capital structure is questionable, there is an asset base of viable products underpinning the company. If Exact Sciences went away tomorrow, the medical community would not care, and patients would be better for it ... there’s no real asset base.

-- Andrew Left, Editor, Citron Research

## Conclusion

It has taken every bit of restraint to not fill this piece with shit jokes. Citron refrained because colon cancer is the second largest cancer killer in the world and we wanted to make sure we didn’t distract attention from this preeminent point.

We believe Exact Sciences is what happens when Wall Street meets bad medicine; we are confident in our prognosis about the outcomes. In writing this piece Citron was encouraged that doctors still want to practice good medicine and that Medicare has policies in place to close pricing loopholes -- two ultimate positives for our healthcare system. If you are 50, go to your doctor and follow their orders. This is life – it’s more than a cute commercial.

### Cautious Investing to All

#### Editor’s Rant on Colon Cancer:

Colonoscopy is considered the gold standard for colorectal cancer detection and prevention. That gives it a 100% sensitivity score – virtually all colon cancers are detected during routine colonoscopy. A recent broad study by Kaiser measured just how effective colonoscopy is. In a large, demographically adjusted, long term study published just recently, Kaiser found that **death rates were 300% higher in comparable populations who weren’t being screened using colonoscopy.**

[http://www.gastrojournal.org/article/S0016-5085\(16\)34617-0/abstract](http://www.gastrojournal.org/article/S0016-5085(16)34617-0/abstract)

Part of this success rate is that colonoscopic procedures routinely **remove** pre-cancerous polyps. The stool test of course can’t do this. So colonoscopy gets

such great results because it is both **diagnostic and preventative**. Patients with a clean Cologuard test think they've avoided colonoscopy, but in actuality they've signed up for an 8 in 100 false negative rate (they have undetected cancer), and they've avoided the removal of pre-cancerous polyps that could be exposing them to future cancers.

Missing 8 in 100 cancers is not **8% less than perfect**. It is in fact inviting patients to play Russian Roulette. So the **cutesy commercials** that encourage patients to opt for a test less invasive and fear-inducing than colonoscopy are actually inviting patients to waste their money, while opting for a test which may increase their chances of developing colon cancer in the future.

Compare that last statement to Kaiser's dramatic results from its colonoscopy study (above), and you have a clear comparison:

- **A diagnostic path with a proven 67% reduction in colorectal cancer deaths.**

... OR ...

- **A diagnostic choice with no clinical evidence of reduction in likelihood of mortality from colorectal cancer. But cute commercials. And it's more convenient... if you don't get sick.**

Welcome to the U.S. healthcare system, 2017 edition. Highest per capita cost in the world, but run-of-the-mill patient outcomes. Exact Sciences is part of the explanation.