

MiMedx Group, Inc.

OTC: MDXG

TARGET PRICE: \$8.09

Prescience Point Research Opinions:

- MDXG shares are conservatively worth at least \$8.09, almost 4x the current share price
- The chances of MDXG going bankrupt are remote
- The majority of MDXG's sales are legitimate and sustainable. Only a small portion of revenue was attributable to end-of-quarter channel stuffing, while widespread bribes / kickbacks did not occur
- The government is highly unlikely to levy a fine large enough to cause MDXG any serious distress

Research Highlights:

- MDXG has a highly flexible cost structure which allows it to generate strong free cash flow at much lower revenue levels. For example, in FY14, MDXG generated \$14.2m of FCF on just \$118.2m of revenue.
- Given its flexible cost structure and strong, debt-free B/S, MDXG should have ample liquidity to fund its operations and ongoing investigations and restatements, which we estimate will cost a total of ~\$65m. Even in a severe downside scenario where FY19 revenue declines by 50% to around \$200m, we project that MDXG will still have >\$20m of cash remaining when its restatement process ends.
- According to numerous former employees and physicians, MDXG's allograft products are some of, if not the best, in the industry. Given this, along with the fact that competitors Osiris and Organogenesis generate hundreds of \$millions of revenue with products of similar or lesser quality, the claim that the vast majority of MDXG's sales are fraudulent appears quite far-fetched.
- Critics have failed to produce any smoking guns – such as internal documents or emails, or any other direct evidence – proving the existence of 1) a widespread physician inducement scheme, or 2) multiple years-worth of product stuffed in the channel.
- Allegations by key whistleblowers are largely centered around end-of-quarter channel stuffing, not massive fraud
- Former employees we spoke with also indicated that MDXG engaged in end-of-quarter channel stuffing, not massive fraud
- Claims of massive fraud are not supported by the numbers. From FY14 through Q317, reported FCF exceeded net income, and DSOs during that time period averaged a reasonable 79.6 days. Further, MDXG's revenue growth, sales per rep and SG&A expenses as a % of sales are all in-line with Osiris and Organogenesis.
- From FY14 through Q317, MDXG repurchased \$100.3m worth of shares without taking on any debt, strongly indicating that its reported cumulative FCF of \$84.9m during that time period is legitimate.
- The recent contraction in MDXG's revenue was mostly driven by reimbursement changes to non-core revenue sources, as opposed to changes to improper sales practices, further indicating that MDXG did not engage in massive fraud.
- Despite the recent decline in its non-core revenue sources, MDXG's core wound care business remains robust.
- DOJ and SEC fines have been considerably dialed back under the current, more corporate-friendly administration. In any event, regardless of administration, the gov't almost never kills companies due to the resulting negative impact on shareholders
- MDXG continues to sell to the VA. Even if it halted all purchases, the VA appears to only comprise around 10% of MDXG's sales.
- The situation at MDXG shares many parallels with past scandals such as Arthrocare, Advanced Emissions Solutions and Osiris, whose shares cratered to all-time lows after being delisted, but then subsequently rose exponentially. We believe MDXG shareholders will enjoy a similarly positive outcome once the current turmoil clears.

DATE OF REPORT
1/7/2019

SHARE PRICE
\$2.16

52-WK HI / LOW
\$18.25 / \$0.95

AVG DAILY VOL
1.6M

MARKET CAP
\$253.9M

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Introduction

Since our founding in 2009, we've become known for our deep research into companies committing fraud, inflating financial performance, misleading investors and misappropriating shareholder capital.

Last year, we exposed financial improprieties at trucking company Celadon Group. In the wake of our report, Celadon fired its top executives, rescinded its previously issued financial statements and watched its stock drop over 90%. Celadon's shares were eventually delisted and both the SEC and federal criminal authorities launched formal investigations.

Activist short-selling serves a vital role in our markets and we are proud to play our part in uncovering wrongdoing. But today we are releasing new research on a company that has been accused of significant wrongdoing, but that we believe has fallen too far. That company is MiMedx Group ("MDXG" or "the company").

Over the last year, prominent short-sellers and whistleblowers have exposed improper behavior at MDXG, which resulted in an announcement that its previously issued financial statements need to be restated, the firing of executives including the CEO, investigations by the SEC and DOJ, an auditor resignation and a stock delisting.

For over five months, we have applied our forensic due diligence process to deepen our understanding of the extent of MDXG's misbehavior, the consequences that might result and the future prospects for the business. We have spoken with former employees, large current MDXG customers, industry and legal experts, competitors, physicians and others. What we developed is a picture of the company that looks wholly different, and much more positive, than the prevailing public narrative.

We are confident in our research and can be bold in our predictions. Here is why we own the stock and believe it is worth multiples more than its current share price:

- Our analysis indicates that the chances of MDXG filing for bankruptcy are remote. MDXG has zero debt, had \$33m of cash as of 12/31/2017 and has a highly flexible cost structure which enables it to generate strong FCF at much lower revenue levels. Even in a severe downside scenario where revenue contracts by 50% to around \$200m in FY 2019, we project that MDXG will still have >\$20m of cash remaining when its restatement process ends.
- Our investigation indicates that the majority of MDXG's product sales are legitimate and sustainable. While MDXG likely did engage in channel stuffing, it appears to have amounted to just a small portion of revenue carried out at quarter-end. While we acknowledge that certain rogue sales staff may have participated in physician inducements on a one-off basis, we found zero evidence of widespread bribes / kickbacks.
- Despite more than a year of investigation, critics have failed to produce any smoking guns to support their claims of massive fraud. No internal documents or emails, or other direct evidence proving the existence of 1) a widespread inducement scheme, or 2) multiple years-worth of product stuffed in the channel have been produced. Furthermore, no key whistleblowers have alleged that MDXG has committed massive fraud. Instead, their allegations are centered around end-of-quarter channel stuffing.

- According to numerous former employees and physicians with whom we spoke, MDXG's allograft products are some of, if not the best, in the industry. Given this, along with the fact that competitors Osiris and Organogenesis generate hundreds of \$millions of revenue with products of similar or lesser quality, the claim that the vast majority of MDXG's sales are fraudulent appears quite far-fetched.
- Concerns over the potential loss of the VA as a customer are overblown, in our view. MDXG remains on the Federal Supply Schedule and, according to MDXG's IR department, continues to sell to the VA. Even if the VA stops purchasing from MDXG, our research indicates that the VA only comprises around 10% of sales.
- The government is highly unlikely to levy a fine that will force MDXG into bankruptcy. According to an expert on government enforcement actions, DOJ and SEC fines have been considerably dialed back under the current, more corporate-friendly, administration. Furthermore, regardless of administration, the government almost never kills companies due to the resulting negative impact on shareholders.

To be clear, we are not suggesting that MDXG is an innocent victim. In addition to potential end-of-quarter channel stuffing, we believe prior management was overly aggressive in growing non-core revenue sources, which either were not exempt under Section 361 (i.e. Amniofix Injectable) or were not backed by strong clinical data (i.e. allografts for non-DFUs/VLUs). It appears that MDXG is now paying the price for this aggressive behavior as recent reimbursement cuts have targeted those revenue sources, and resulted in a material contraction in the company's sales.

That said, although its non-core revenue has recently declined, the company still remains the market leader in its core wound care business. Thus, when the current controversy eventually clears, we believe that the company will still have a sizable and viable business remaining.

In our view, MDXG is one of the largest mispricings we have ever identified. Those who invest now are getting ownership in a business with enough liquidity to survive, that has industry leading products in a sizable, fast growing market and a promising pipeline of late-stage clinical trials – at an extremely low valuation of <1x sales which is far below that of its competitors who are trading in excess of 3.6x sales.

Furthermore, following the latest wave of negative news, we believe the news cycle for MDXG (but not prior management) is about to turn, as there are a number of potentially positive catalysts on the horizon, including:

- The hiring of a new auditor
- The appointment of new Board members
- Completion of the Audit Committee's investigation
- The release of preliminary audit results
- The hiring of a new CEO

Thus, with its shares seemingly at an inflection point, we believe now is the ideal time to initiate a LONG position in MDXG.

Why Does This Opportunity Exist?

MDXG's swift rise as a healthcare darling has been followed by an even swifter fall from grace.

Using its proprietary Purion platform technology, MDXG converts donated placental tissue into amniotic membrane products. Over the past few years, the company has grown to become the leading global supplier of allografts (tissue grafts) to the wound care market. MDXG's flagship allograft products – Amniofix and Epifix – are used in a variety of applications including the treatment of chronic wounds (e.g. diabetic foot ulcers), burns and surgical wounds.

The company's troubles began in late 2017 when it became the target of a group of prominent short-sellers. Their reports on the company can be found [here](#), [here](#) and [here](#).

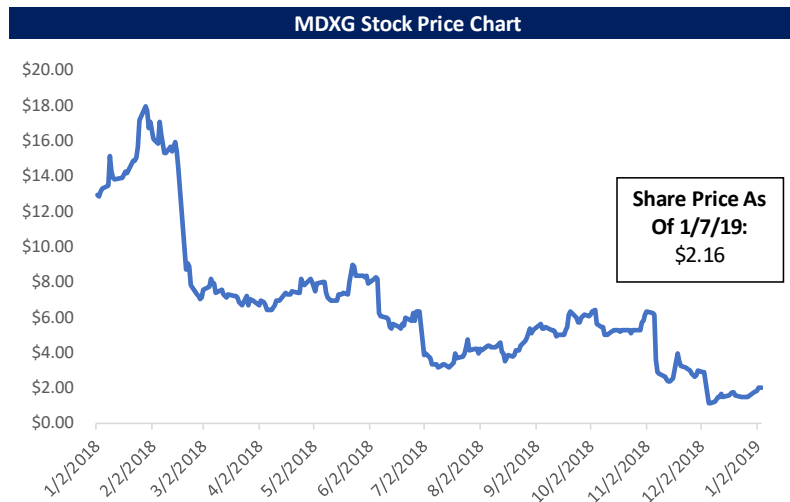
Critics believe that MDXG is a massive fraud. Numerous allegations have been levied at MDXG, but central to the bear thesis is the contention that the majority of the company's sales are fraudulent and have been largely generated via

- 1) massive channel stuffing, and/or
- 2) widespread inducement of doctors via bribery / kickbacks

Developments over the past few months show that the allegations have a degree of merit – In June, MDXG [announced](#) that its financial statements going back to 2012 would have to be restated. Former CEO Parker H. Petit, along with other MDXG executives, was subsequently fired for cause, and an interim CEO from the restructuring firm Alvarez & Marsal was hired to run the business. The company also revealed that it was [under investigation](#) by multiple regulatory bodies including the SEC and DOJ.

The past two months have proven to be especially painful for MDXG and its shareholders:

- On November 7th MDXG [announced](#) that the Nasdaq had decided to immediately delist MDXG shares, reversing its previous decision to grant the company a listing extension until February 25th. This triggered a wave of mandatory institutional selling and resulted in a more than 50% decline in the company's share price.
- Then, on December 5th, the company announced its plans to [lay off](#) 24% of its workforce in response to a recent, material softening in its revenue, and revealed that its auditor E&Y had abruptly [resigned](#). Following these announcements, MDXG shares cratered to an all-time low of \$0.95. As of 1/7/2019, MDXG shares still trade at just \$2.16, 88.2% below its all-time high of \$18.25.



Claims Of Imminent Bankruptcy Hold No Weight

At the moment, many market participants believe MDXG is simply uninvestable given recent turmoil and negative headlines surrounding its business. At higher valuation levels, we would agree with this sentiment. However, with MDXG shares trading near all-time lows, we believe its equity presents a highly attractive investment opportunity from a risk-reward perspective.

At this depressed valuation, the success of an investment in MDXG now comes down to one simple question: Will MDXG go bankrupt? If the company is able to remain solvent through its current crisis, then its shares should appreciate significantly.

Based on recent developments, critics claim that a bankruptcy filing by MDXG is imminent. They claim that the company will soon be insolvent because its declining sales are not sufficient to sustain its operations and fund its ongoing restatements and investigations.

We, on the other hand, believe that a bankruptcy filing by MDXG is highly unlikely primarily for two reasons:

1. **MDXG has a strong balance sheet:** MDXG has zero debt and had [\\$33m](#) of cash on its balance sheet as of 12/31/2017. With a significant net cash position, the company does not have any other major obligations to fund besides its ongoing investigations and restatements.
2. **MDXG has a highly flexible cost structure:** With SG&A expenses accounting for around 80% of its total expenses, MDXG has a high proportion of variable costs and can easily scale its operating expenses to match its revenue. This gives the company the ability to generate strong FCF at significantly lower revenue levels, as illustrated by its historical FCF generation:

Historical FCF Conversion: FY 2014 to Q3 2017

	9 Mos				Total
	FY 2014	FY 2015	FY 2016	FY 2017	
Total Revenue	\$118.2	\$187.3	\$245.0	\$233.6	\$784.1
Operating Cash Flow	\$16.8	\$18.8	\$25.8	\$42.1	\$103.5
(-) Capex	(\$2.6)	(\$5.8)	(\$6.3)	(\$4.0)	(\$18.7)
Free Cash Flow	\$14.2	\$13.0	\$19.6	\$38.1	\$84.9
FCF Conversion as % of Sales	12.0%	6.9%	8.0%	16.3%	10.8%

Source: MDXG filings with the SEC.

It is exceedingly rare for a business with such strong financial characteristics to become insolvent. Yet, critics believe that MDXG will somehow be an exception.

Despite the recent, material contraction in its revenue, the company's debt-free balance sheet and flexible cost structure should enable it to easily generate enough liquidity to fund itself through its current crisis. To illustrate, we will construct a liquidity analysis with the following assumptions:

- Restatement period concludes at the end of FY 2019
- Restatement and investigation costs total \$65m combined in FY 2018 and FY 2019. We believe this is a fair and likely overly conservative assumption given that Arthrocare spent ~\$50m over approximately 1.5 years (late 2008 to early 2010) for a restatement process which was similar in scope
- Q1 2018 and Q2 2018 revenue are in-line with guidance at \$92m and \$97m, respectively, Q3 2018 is flat with Q2 2018, and Q4 2018 is 24% lower than Q3 2018 at \$73.7m. Adding it all up, total FY 2018 revenue is an estimated \$359.7m. The estimated decline of 24% from Q3 to Q4 is based on the recently announced 24% headcount reduction, which was in response to a recent softening in the company's revenue
- FY 2019 revenue is equal to run-rate Q4 2018 revenue of \$294.9m (\$73.7m * 4)
- FCF conversion of 10.8% of sales, which is equal to MDXG's average FCF conversion from FY 2014 through the first nine months of FY 2017

Using the above assumptions, we project that the company will have a considerable \$35.7m of cash remaining on its balance sheet when its restatement process concludes:

Projected FCF: FY 2018 & FY 2019

(\$ in millions)	FY'18	FY'19
PP Estimated Revenue ⁽¹⁾	\$359.7	\$294.9
(*) FCF Conversion as % of Sales ⁽²⁾	10.8%	10.8%
PP Estimated FCF ⁽³⁾	\$38.9	\$31.9

(1) FY'18 revenue assumes Q1'18 and Q2'18 are within guidance, Q3'18 is flat with Q2'18 and Q4'18 is 24% lower than Q3'18. FY'19 revenue equal to run-rate of PP estimated Q4'18 revenue.

(2) Based on average historical FCF conversion from FY'14 to Q3'17.

(3) FCF is defined as Operating CF - Capex.

Projected Liquidity

(\$ in millions)	
Reported Cash Balance - 12/31/17	\$33.0
(+) FY 2018 FCF	\$38.9
(+) FY 2019 FCF	\$31.9
(-) Restatement and Investigation Costs	(\$65.0)
(-) Severance Costs ⁽¹⁾	(\$3.2)
Projected Cash Balance - 12/31/19	\$35.7

Source: MDXG news releases. Prescience Point estimates.

(1) Assumes layoffs amounting to 24% of workforce or 240 employees with an average annual salary of \$150K and an average tenure of 4.6 years which is inline with the national average. Also assumes that severance per employee amounts to a week's pay for every year of employment with the company.

Even in a severe downside scenario where MDXG's FY 2019 revenue declines to \$194.0m, representing a 50% decline from its annualized Q2 2018 guidance, we project that the company will still have \$21.3m of cash on its balance sheet when its restatement process concludes:

Projected FCF: FY 2018 & FY 2019

(\$ in millions)	FY'18	FY'19
PP Estimated Revenue ⁽¹⁾	\$359.7	\$194.0
(*) FCF Conversion as % of Sales ⁽²⁾	10.8%	10.8%
PP Estimated FCF ⁽³⁾	\$38.9	\$21.0

(1) FY'18 revenue assumes Q1'18 and Q2'18 are within guidance, Q3'18 is flat with Q2'18 and Q4'18 is 24% lower than Q3'18. FY'19 revenue equal to run-rate of PP estimated Q4'18 revenue.

(2) Based on average historical FCF conversion from FY'14 to Q3'17.

(3) FCF is defined as Operating CF - Capex.

Projected Liquidity

(\$ in millions)	
Reported Cash Balance - 12/31/17	\$33.0
(+) FY 2018 FCF	\$38.9
(+) FY 2019 FCF	\$21.0
(-) Restatement and Investigation Costs	(\$65.0)
(-) Severance Costs ⁽¹⁾	(\$6.6)
Projected Cash Balance - 12/31/19	\$21.3

Source: MDXG news releases. Prescience Point estimates.

(1) Assumes layoffs amounting to 50% of workforce or 500 employees with an average annual salary of \$150K and an average tenure of 4.6 years which is inline with the national average. Also assumes that severance per employee amounts to a week's pay for every year of employment with the company.


One More Thing


Some believe that the hiring of David Coles as interim CEO is an indication that MDXG is preparing for an eventual bankruptcy filing. In support, they have pointed to his past engagements at distressed companies, which notably includes a stint as interim CFO of Lehman Brothers just prior to its collapse.


While Mr. Coles does have past bankruptcy experience, it appears that his current focus is on engagements at less troubled businesses. This is supported by his recent stints at Campus Crest and PHH Corp, both of which were non-distressed situations, as well as his LinkedIn [profile](#) which states that he is "increasingly involved in less troubled, transformation roles and public company situations."


David Coles • 3rd
Interim Manager
Greater New York City Area

[Message](#) ...


 Alvarez & Marsal

 Cardiff University / Prifysgol
Caerdydd

 See contact info

 500+ connections

Experience



Managing Director
Alvarez & Marsal
Feb 1997 – Present · 21 yrs 10 mos
NYC

Interim/crisis management and financial advisory services to a broad range of middle market businesses. Recent experiences include consumer products and financial services. Increasingly involved in less troubled, transformation roles and public company situations.

A Troubled Company? Yes. A Complete Fraud? No.

As we detailed in the prior section, even if MDXG's revenue declines by 50%, the company should still have enough liquidity to remain solvent and survive the current turmoil. Some critics have argued that almost all of MDXG's sales are fraudulent and have been largely generated via channel stuffing and inducement of doctors. If this is true, then the company will go bankrupt regardless of its strong balance sheet and flexible cost structure. But our research overwhelmingly indicates that this is not the case.

Make no mistake, we have no delusions that MDXG is a completely innocent victim. The company is in the process of restating almost six years of financials and its CEO, CFO and COO were all recently let go for cause. Some degree of wrongdoing has almost certainly occurred. However, where we disagree with critics is on the extent of this wrongdoing.

For reasons which are listed and detailed below, we believe that MDXG is a mainly legitimate business, and that the majority of its sales were and are real. Thus, we believe that the company will still have a sizable revenue base once the current controversy clears.

MDXG has industry-leading products in a sizable, fast-growing market

The assertion that the majority of MDXG's sales are fraudulent does not line up with the fact that the company has industry-leading products in an end market that is sizable and growing rapidly.

MDXG's main competitors in the allograft space include Osiris and Organogenesis. These companies currently generate almost \$150m and \$200m of annual revenue, respectively, and both are growing their topline in excess of 20% YoY due to the rapid growth of the allograft market.

Given that its competitors are sizable and thriving, we find it hard to believe that the vast majority of MDXG's sales could be fraudulent. This is especially so when considering that the company's core allograft products (i.e. Epifix and Amniofix) are some of, if not the best in the industry.

During our research, we spoke with several doctors, ex-employees and industry participants about MDXG. All of them had overwhelmingly positive things to say about its products.

Doctors love MDXG's products because they 1) are dehydrated and thus store easier than competing products, which are cryogenically frozen, 2) are offered in a wider variety of sizes than competing products, 3) have a long, five-year shelf life, 4) reimburse well from private insurance and Medicare / Medicaid, and 5) perhaps most importantly, they are highly effective in healing wounds.

Provided below is some of the specific feedback we received:

Physician 1: *Epifix does it work? Yes. Do they have tons of data? Yes. Amniofix does it work? Yes. Is there tons of data? Yes...I mean it's real, and the sales are real, and when someone has it [i.e. MiMedx products] they want to use it.*

Physician 2: *It actually works remarkably well, quite honestly...The thing I found about the MiMedx product which differs from a lot of the other products is that for larger area wounds the MiMedx actually helps the wound to re-epithelialize...Although the product itself is very expensive, you're actually saving costs on the back end because you're not taking the patient back for another operation.*

Physician 3: *Whenever possible I try to use Epifix because of the ease of use, the availability, long shelf life...The problem with those companies, [like] Organogenesis, is their skin substitutes only come in one or two sizes...If you only use a small quantity of the graft when you bill Medicare or any insurance company you have to report wastage.*

Several former MDXG employees also spoke glowingly of the company's products:

Former Employee 1: *They just came in like a bullet to the market, but the thing was their product really was a good product. Epifix really was a game-changing product.*

Former Employee 2: *Here's why I would have a lot of optimism – The product really freaking works...They're transformative in the way that they work. You know, they [i.e. critics of MDXG] have all this stuff saying 'Oh these physicians...' No, no, no. Physicians were using it because it worked. The talk track was, the ten patients you have that can't be healed any other way, try this on them. And they would try them, and they would be hooked.*

Former Employee 3: *Based on the data, which is true data, I don't know where everybody is really coming [from] saying the data has been falsified and exaggerated. It's true because we see that happening in the clinic. We see that happening in the operating room...There's many properties to how this Amniofix and Epifix works for patients. You know, [it] accelerates healing, reduces inflammation, protects things like even in nerve repair [and] nerve regeneration. They yet have that whole market to go into.*

I literally would go in with some of these reps, and do the follow-ups with patients who could barely walk-in with plantar fasciitis, and do the follow-up a week later and see the patient walking in with a normal gait, saying his pain on a 1 to 10 scale was like a 2. And this is like on a regular basis. This wasn't just like 1 out of 10, this was like 9 out of 10, or almost every single patient saying that they were almost completely pain free.

Even the *Wall Street Journal*, which has written a series of scathing articles about the company ([here](#), [here](#), [here](#), and [here](#)), could not find anyone to say something negative about its products:

No one has suggested MiMedx's products are faulty... MiMedx's amniotic-membrane products are the ones most commonly used by doctors and are generally considered to be safe and of good quality, said Robert Kirsner, director of the University of Miami Hospital Wound Center.

Finally, MDXG's products were also mentioned positively in a recent *Buffalo News* [article](#) by a doctor who is using allografts to treat children with severe burns:

"We're getting great results" with amnion tissue supplied by the MiMedx pharmaceutical company, Bass said, particularly with children who suffer burns to the face, chest and connective tissues.

Allegations of key whistleblowers are centered around end-of-quarter channel stuffing, not massive fraud

Some of the most compelling evidence that the extent of wrongdoing was far less than alleged by critics are the whistleblower cases they themselves cite as evidence (i.e. the cases of [Luke Tornquist](#), [Jess Kruchoski](#), [Mike Fox](#) and [Hal Purdy](#)). As detailed below, the allegations made by these whistleblowers are actually very mild. We believe this is extremely telling, as these individuals are disgruntled former employees with every incentive to pile on.

A summary of the whistleblower allegations is as follows:

None of the whistleblowers made any allegations that MDXG had engaged in a widespread bribery or kickback scheme to induce usage of its products. Instead, their allegations are largely centered around channel stuffing at VA hospitals (via MDXG's ex-VA distributor AvKARE).

In regards to the channel stuffing, the amount of channel stuffing alleged by the whistleblowers was nowhere near the amount critics have claimed. In their suits against the company, the whistleblowers alleged that the company's channel stuffing activities were carried out at quarter end to hit earnings targets and only amounted to a couple \$million per quarter. As an example, they estimated that Q1 2016 revenue was inflated by \$2.5m from channel stuffing. This represents just 4.6% of the company's reported Q1 2016 revenue of \$53.4m.

19. The channel-stuffing scheme is simple: at the direction and pressure of MiMedx's executive officers and senior management, MiMedx sales representatives order EpiFix grafts for delivery to VA hospitals throughout the country.

20. Neither AvKARE nor the end customer—the VA—requests the EpiFix orders.

21. The channel stuffing routinely occurs at the end of each financial quarter.

63. Therefore, at minimum, MiMedx sent 405 7x7 EpiFix grafts in the final four days of Q1 2016, mostly to VA accounts that typically use less than five 7x7 EpiFix grafts throughout the entire year. In all, MiMedx sent \$2,462,508 of product to 20 VAs in the last four days of Q1 2016.

(Source: Kruchoski & Tornquist vs. MDXG suit)

34. MiMedx's channel stuffing routinely occurred at the end the Company's fiscal quarters – i.e., shortly before MiMedx was required to report its quarterly revenue figures to the SEC.

63. In all, MiMedx stuffed VA hospital shelves with between \$2,007,395 and \$2,462,509 of excess 7x7 cm EpiFix grafts in the last days of Q1 2016 alone. MiMedx then "billed" AvKARE for these 7x7 cm EpiFix grafts at the time of shipment by adding the cost of the EpiFix grafts to AvKARE's account in MiMedx's accounts receivable.

(Source: Fox vs. MDXG suit)

Former employees with whom we spoke agreed that this is an end-of-quarter channel stuffing story, not massive fraud

Over the course of the past five months, we spoke with numerous former MDXG employees, most of whom were former sales reps and sales managers, about their experiences at the company. They, like the whistleblowers, indicated that the extent of MDXG's wrongdoing was far less than alleged.

In regards to channel stuffing, the former employees with whom we spoke also indicated that the company's channel stuffing only amounted to only a small portion of total revenue per quarter and was primarily done at the end of quarters to hit earnings targets. **One of them even indicated that the channel stuffing had actually ceased around two years ago.** Provided below are excerpts from some of these conversations:

Former Employee 1: So AvKare was a way, just like these third party stock & bill distributors, was a way to hit their number. So, if they needed product, they could sell it to AvKare. They would book it as sales, even though AvKare hadn't exactly sold it to the VA. I don't know about the legalities of that, I just know that was what was going on.

But because they had a two-year window, right, so that allowed AvKare to disperse out all of the excess inventory that they had without having it flood into the market in one quarter....***So the fallout of anything as it relates to AvKare, has already, I mean it's already dissipated.*** It's already out there. There's nothing really, there's no more smoking gun as it relates to any AvKare products. ***And the same with the other stock and bill distributors.***

Former Employee 2: It [channel stuffing] was probably to the tune of \$2m a quarter ever since 2012...They would just dial for dollars on a quarterly basis and say 'Hey, look we're about 100 grand short what can you send'

Former Employee 3: There was some channel stuffing going on, not rampant, but going on.

In regards to the bribery allegations, while some mentioned that they had heard of a few reps acting inappropriately, they all indicated that this behavior was neither widespread nor directed by senior management:

Former Employee 1: *I do not believe that there was widescale physician inducement. And the physicians that were using it [i.e. MDXG products] were using it because they believed in it.*

There was a [speaker] fee but it wasn't outrageous. I mean I don't think it ever got above \$2,500 a day which is on the higher end of the range but it's certainly not outrageous money for what these guys [physicians] have to do. They have to take a day off work. They have to travel. They have to do all that stuff. So, not a real glamorous life.

Former Employee 2: *There was never any quid pro quo to say 'hey do this for me and I'll give you a trial'...There was a lot of speaking engagements that were legit that were based off an hourly price depending on their specialty...I never saw anything where MiMedx would say 'hey, go induce this guy and we'll work out something for you.' Now, there may be a couple reps out there that were just doing more than they should have...*

Former Employee 3: *There was never a directive from management to go out and do these things*

Former Employee 4: *Some guys are being ridiculed publicly...by posting these people that aren't doing anything wrong. Like John Ko who is a plastic surgeon at the Bronx VA. He's done nothing wrong. He's not getting paid by the company. He doesn't have any shares...He gets paid for the lectures. That's it. No watches, nothing. There's a maximum amount, \$60,000 a year is the top any surgeon can make. They were always very strict with those rules.*

Finally, in regards to the allegations that MDXG had provided kickbacks to doctors primarily via physician-owned distributors ("PODs"), all of them indicated that they had never come across any concrete evidence of such kickbacks, and most of them dismissed these allegations as being completely far-fetched:

Former Employee 1: *The one piece of that that I'm not aware of but I would have heard if it was rampant are these physician owned distributorships. I don't think that that was widespread in any way. It would be a blip on the radar or a definite one-off if that was happening.*

Former Employee 2: *I didn't hear about the physician owned distribution until after I had left...They certainly didn't promote that to us. It was never a directive to go out and find doctors to do distributorships, at least not at my level being a new rep and kind of ramping up.*

Former Employee 3: *I don't think people are too open to doing that these days [i.e. illegal kickbacks via PODs]. I don't think anybody's gonna risk their medical license. I really doubt it. I think it's bull**** what they're saying*

Allegations of massive fraud do not reconcile with the numbers

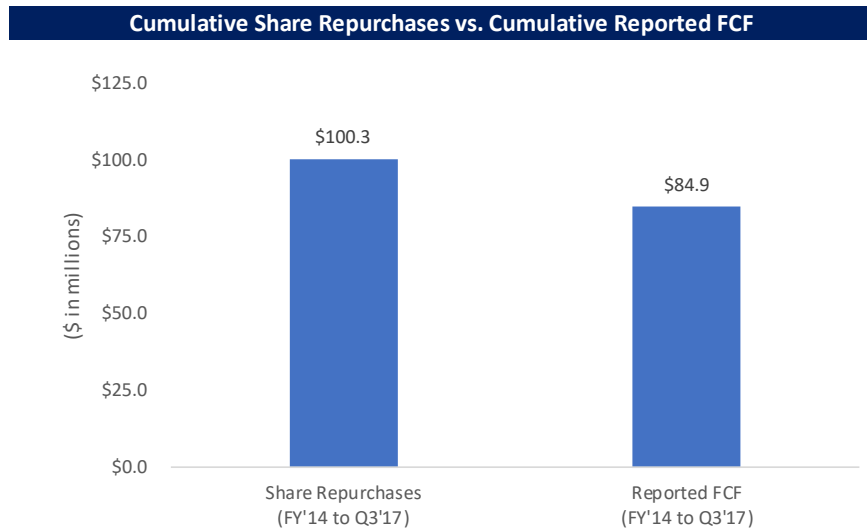
If MDXG was massively stuffing the channel, then this should have resulted in extremely poor FCF generation in relation to net income, as well as significantly elevated DSOs. But this was not the case.

From FY 2014 to Q3 2017, the company's reported cumulative FCF (defined as operating CF – capex) was \$84.9m, while reported cumulative net income was actually \$7.4m lower at \$77.5m. Meanwhile, during that same time period, DSOs have trended downwards and have averaged a reasonable 79.6 days.



Some may argue that because MDXG is restating almost six years of financials, its historical cash flow statements should not be relied upon. But, as any forensic accountant will tell you, cash flow almost never lies as it is very hard to fabricate.

Furthermore, the company repurchased \$100.3m worth of shares from FY 2014 to Q3 2017 without taking on any debt, strongly indicating that its reported cumulative FCF of \$84.9m during that time period is accurate.



Source: MDXG's SEC filings.

The claim that MDXG is a massive fraud is also refuted by the fact that its historical sales growth, sales per rep and SG&A expenses are all in line with those of its competitors:

- Sales growth:** Critics have argued that MDXG's revenue CAGR of 44.0% from FY 2014 to FY 2016 could only have been achieved through illegal sales practices. But due to the rapid growth of the wound care market, many of the company's competitors are also growing in excess of 30%. Notably, Osiris

grew its revenue at a 32.6% CAGR from FY 2014 to FY 2017, while Organogenesis grew its revenue by 43.1% in FY 2017 (as disclosed in its August 2018 investor [presentation](#)).

Revenue Growth: MDXG vs. Competitors

<i>(\$ in millions)</i>	Growth Rate	Time Period
MiMedx ⁽¹⁾	44.0%	FY'14 - FY'16
Osiris ⁽²⁾	32.6%	FY'14 - FY'17
Organogenesis ⁽³⁾	43.1%	FY'16 - FY'17

(1) Source: MDXG's SEC filings.

(2) Source: OSIR's SEC filings.

(3) Source: Organogenesis's Aug 2018 investor presentation.

- **Sales per rep:** If MDXG was massively stuffing the channel and inducing doctors, then one would expect that the company's revenue per sales rep would be significantly higher than its competitors. But this is not the case. As shown in the table below, MDXG's annualized revenue per rep in its last reported quarter (Q3 2017) was \$0.9m, while OSIR and Organogenesis are currently generating around the same amount per rep at \$0.9m and \$1.0m, respectively:

Annualized Revenue Per Sales Rep: MDXG vs. Competitors

<i>(\$ in millions)</i>	MDXG	OSIR	ORG
Annualized Revenue	\$338.3 ⁽¹⁾	\$146.0 ⁽²⁾	\$198.5 ⁽³⁾
÷ # of Sales Reps	360 ⁽⁴⁾	162 ⁽⁵⁾	200 ⁽⁶⁾
Annualized Revenue Per Sales Rep	\$0.9	\$0.9	\$1.0

(1) Equal to reported Q3 2017 revenue * 4.

(2) Equal to reported Q3 2018 revenue * 4.

(3) Equal to reported FY 2017 revenue.

(4) Number of reps as of the end of Q3 2017.

(5) Equal to ~150 reps as of January 2018 (as per MDXG's January 2018 investor presentation) + 8% YoY growth in reps (as per LinkedIn).

(6) Equal to number of reps as of Aug 2018

- **SG&A expenses:** Critics have pointed to the company's high SG&A expenses – 72.1% of sales in the first three quarters of FY 2017 – as evidence of fraudulent behavior. They believe that these expenses are elevated due to 1) bribery payments, and/or 2) improper expensing of returned channel stuffed product. Yet, Organogenesis projects that it will spend a similar amount on SG&A expenses in FY 2019 at 71.5% of sales, while OSIR has also spent a significant amount on SG&A expenses YTD at 63.0% of sales.

SG&A Expenses as a % of Sales: MDXG vs. Competitors

	SG&A Expenses As % Of Sales
MiMedx ⁽¹⁾	71.2%
Osiris ⁽²⁾	63.0%
Organogenesis ⁽³⁾	71.5%

(1) Based on reported Q3 2017 financials.

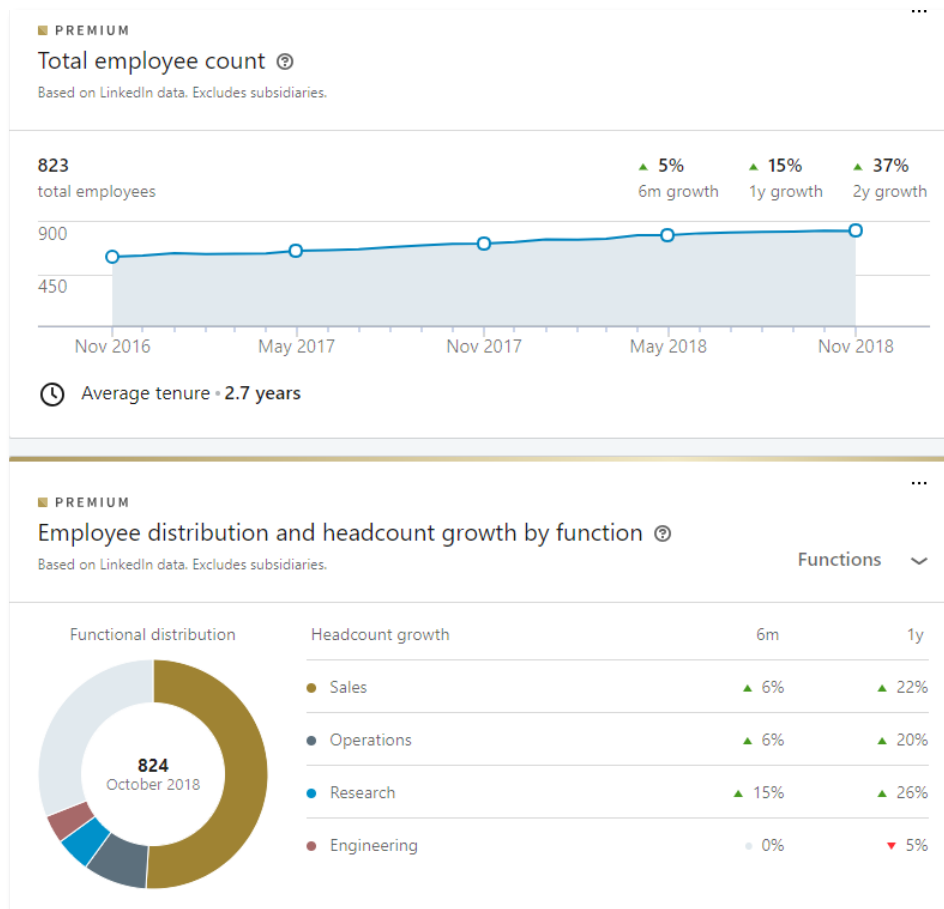
(2) Based on reported YTD Q3 2018 financials.

*(3) Based on FY 2019 projections provided in
Organogenesis's Aug 2018 investor presentation.*

Timing of recent revenue decline supports our conclusion that MDXG is a mainly legitimate business

If MDXG was committing massive fraud, common sense dictates that the company's revenue would have almost immediately started to collapse following the hiring of Mr. Coles as interim CEO, who undoubtedly would have begun to clean up a lot of this behavior upon his arrival in July. Yet, this did not happen.

Prior to its recent announcement that it was laying off 24% of its workforce, MDXG's headcount had actually increased across almost all functions according to data provided by LinkedIn. This indicates that the company's revenue was actually increasing during the first few months of Mr. Coles's tenure.



Supporting the LinkedIn data is a recent post on MDXG’s corporate [Facebook](#) page. As shown below, on October 12th, MDXG announced that it 1) had just hired 13 new sales reps, and 2) had more than 450 existing reps prior to these hires. Based on this, we calculate that the company employed at least 463 sales reps as of the date of the announcement, representing a >28% increase from the 360 reps it employed a little over a year ago (as per MDXG’s Q3 2017 earnings call).



So why did MDXG's revenue growth recently and suddenly reverse course? We were told by MDXG's IR department and confirmed independently through our own research, that the recent softening in MDXG's revenue was primarily attributable to reimbursement changes for some of its non-core revenue sources.

These changes included Noridian, a government claims contractor for Medicare in certain west coast states, recently dropping coverage of allograft products for non-core indications (i.e. non-DFUs/VLUs). Additionally, BCBS recently dropped coverage of MDXG's Amniofix injectable product. Both of these changes took effect in the fourth quarter of this year.

The fact that the recent decline in MDXG's revenue was primarily attributable to reimbursement changes rather than changes to improper sales practices strongly indicates that the company did not engage in massive fraud.

So why are insurance companies and Medicare all of a sudden dropping coverage for some of MDXG's non-core products and indications? The company's Amniofix injectable product, although undergoing clinical trials at the moment, does not have FDA approval. Furthermore, the use of allografts for indications beyond DFUs and VLUs is backed by less clinical data. We believe the current controversy has resulted in the dicier parts of MDXG's business being treated with extra scrutiny, and these cuts are the result of that scrutiny.

The next natural question is will these cuts spread to MDXG's core business? We believe this is doubtful given that the use of allografts in treating DFUs and VLUs is a well-accepted and common practice in wound care. Furthermore, we have a hard time imagining insurance and Medicare singling out MDXG for reimbursement cuts when its products are some of, if not the best in the industry.

Critics Have Failed To Produce Any Smoking Guns

MDXG has been under intense scrutiny for over a year now. If the severe allegations levied at the company were true, one would expect that smoking gun evidence of pervasive fraud would have emerged by this point. But this has not happened.

Up until now, no internal documents or emails, or other direct evidence proving the existence of 1) a widespread inducement scheme, or 2) multiple years-worth of stuffed product in the channel has been produced.

Instead, much of the key evidence that has emerged against MDXG is actually rather weak and circumstantial in nature, and none of it indicates that the company has committed fraud on as large of a scale as claimed:

- **Key whistleblower cases:** Critics have used the whistleblower cases of Luke Tornquist, Jess Kruchoski, Mike Fox and Hal Purdy as evidence in support of their claims of massive fraud. We are puzzled as to why because these cases actually contradict them. As we discussed previously, the whistleblower allegations are mostly limited to end-of-quarter channel stuffing amounting to just a small portion of MDXG's total revenue.
- **Indictment of VA doctors in SC and MN:** Critics have pointed to the recent indictment of doctors at VA hospitals in [South Carolina](#) and [Minneapolis](#) as key evidence in support of their bribery claims – In May 2018, three South Carolina VA workers were indicted for excessively using MDXG products in exchange for meals, tips and gratuities. Four months later, in September 2018, five Minneapolis VA workers resigned over undisclosed issues related to MDXG products.

Critics believe that these recent developments at the VA prove that MDXG is extensively bribing doctors. However, we believe that this conclusion is misguided.

To begin with, it is a huge leap to conclude that evidence of potentially dirty sales tactics at two hospitals means that this is a systemic, company-wide issue.

Additionally, the available evidence indicates that these alleged bribes were not directed by senior management but were instead committed by rogue sales agents who were subsequently terminated for their behavior.

This is supported by the fact that,

1. MDXG has yet to be indicted for any crimes related to these cases;

2. MDXG had previously [sent information](#) to the Office of Inspector General (“OIG”) regarding employees it terminated for possibly not following VA rules; and
3. MDXG’s IR department told us that, based on information received to date, the SC VA indictments appear to be linked to a terminated SC sales rep that the company had referred to the OIG

Furthermore, on October 2nd, the SC VA doctors under indictment (e.g. Donna Becker, Dolores Farrer and Carol Guardiola) were [granted a continuance](#) by agreeing to a Pretrial Diversion Program, essentially meaning that these doctors will be put on probation and the charges will likely be dropped. This indicates that whatever alleged misconduct occurred between these doctors and the MDXG sales reps was not severe enough to warrant criminal prosecution.

Per the DOJ’s [website](#):

*Pretrial diversion (PTD) is an alternative to prosecution which seeks to divert certain offenders from traditional criminal justice processing into a program of supervision and services administered by the U.S. Probation Service. In the majority of cases, offenders are diverted at the pre-charge stage. **Participants who successfully complete the program will not be charged** or, if charged, will have the charges against them dismissed; unsuccessful participants are returned for prosecution.*

- **Physician-Owned Distributors:** Critics have pointed to the company’s relationships with distributors / sales agents RedMed and CPM Medical as key evidence that MDXG is using PODs to provide kickbacks – RedMed was recently charged with providing kickbacks to doctors of the South Texas Health System, while CPM previously sold product to Forest Park Medical Center, a physician-owned hospital whose owners were indicted for paying kickbacks to doctors (as detailed [here](#)).

Critics argue that, because RedMed and CPM have ties to kickbacks not involving MDXG, these distributors must have also provided kickbacks related to MDXG products. However, they have been unable to produce any direct evidence to support this highly speculative claim. Additionally, it is important to note that neither RedMed nor CPM are owned by physicians. In other words, they are not PODs!

Critics have also pointed to a letter that they received from a former MDXG employee alleging a kickback scheme involving MDXG products at Baylor Surgical Hospital (as discussed in a [February 2018 Periscope](#)). We are unable to confirm or deny this claim. That being said, it is quite a leap to conclude that a single, unsubstantiated allegation of kickbacks at a single hospital means that MDXG is providing kickbacks to doctors across the country.

Further casting doubts on the allegations of widespread kickbacks is the fact that the US government and the healthcare industry have made a concerted effort to crackdown on PODs due to their inherent conflicts of interest. As a result of this increased scrutiny, many large hospital chains have strictly forbid or curtailed business with PODs.

The 2013 SFA helped to inform the medical community of the dangers posed by PODs, and many hospitals and health systems have recognized these dangers and implemented policies to better govern their relationships with PODs..It appears that PODs are no longer

concentrated in large hospital chains, many of which have adopted policies forbidding or strictly curtailing business with PODs.

(Source: 2016 US Senate Finance Committee [Report](#) on PODs)

Finally, as we previously discussed, numerous former employees with whom we spoke dismissed the allegation that MDXG was extensively using PODs. Several doctors who are users of MDXG products and healthcare industry experts with whom we recently spoke also agreed with this assessment. Provided below are a couple relevant excerpts from these conversations:

***Physician:** I think that type of, kind of, POD organization [is] probably not that common to be honest with you ...There are so many steps that you would have to go through in order to do that. And again, to me it seems very far fetched...I don't think you're gonna get away with that at a big institution. I don't even think you're gonna get away with it at something like the VA. Just because there are so many different entities involved in the billing process. You have to get every single one of them on board. And it's not one person. It's not one person's doing my billing. There is like a billing department which has probably like a dozen people. So you have no idea which person is gonna be handling what particular case. You have to get everybody in the billing department on board with doing this scheme.*

***Industry Expert:** I personally have not seen the PODs...The use of PODs is not very common. It's dumb on steroids fraught with risk, and hospitals find it to be a huge conflict of interest.*

- **Other Key Evidence:** The other key evidence that critics have provided is also not very compelling.

In regards to additional evidence of channel stuffing, critics have produced the following (as detailed [here](#)):

1. leaked internal MDXG emails regarding inventory reconciliation issues at ex-VA distributor AvKARE and consignment agreements changes with the VA
2. a photo of a locker at a VA facility filled to the brim with MDXG product, and;
3. public records confirming the existence of distributors of MDXG products owned by MDXG employees (e.g. SLR Consulting, StreamLogix, etc.).

While some of the above evidence could be interpreted as being indicative of channel stuffing, none of this evidence suggests it is being done on the scale that critics contend.

In regards to additional evidence of inducement of doctors, critics have pointed to the [hiring](#) of several former Advanced BioHealing ("ABH") sales reps by MDXG. For those who are not familiar, ABH paid [bribes and kickbacks](#) to countless doctors to induce usage of its products over a period of several years starting in 2008.

Just because MDXG hired several reps from ABH does not automatically mean that the company adopted ABH's fraudulent sales practices across its organization. Consider that Osiris actually hired ABH's former CEO Todd Clawson as its National Sales Director but, based on its recently completed internal investigation, was not found to have paid bribes or kickbacks.

Concerns Over Potential Loss Of VA Business Appear Overblown

Given that MDXG's wrongdoing appears to have been largely concentrated at VA hospitals (e.g. channel stuffing via AvKare, indictment of VA doctors in SC and MN), there has been a considerable amount of speculation and concern that the company will entirely lose the VA as a customer.

This concern was magnified when the Wall Street Journal recently [disclosed](#) that MDXG had been excluded from a \$2.1Bn VA biologics contract announced in early October:

MiMedx's relationship with government facilities appears now to be in flux. A \$2.1 billion VA contract awarded to 21 makers of biologic implants announced in early October didn't include MiMedx. A spokesman for the VA said additional contracts may be awarded.

But we believe this concern is overblown for two reasons:

1. **MDXG can and still is selling to the VA:** Although the exclusion of MiMedx from the recent \$2.1Bn biologics contract could certainly lead to reduced sales to the VA, the company is still able to sell to the VA as its products remain on the Federal Supply Schedule. Furthermore, during a recent conversation with MDXG's IR department, we were told that the company continues to sell to VA hospitals.
2. **Annual VA sales appear to be around 10% of total revenue:** Even if MDXG completely loses the VA as a customer, the impact on its business will not be nearly as catastrophic as some critics have claimed.

In a bearish [report](#) published in September 2017, it was estimated that the VA accounted for ~25% of MDXG's total revenue in FY 2016:

Direct business with Veterans Affairs is estimated by brokers to be ~25% of MiMedx's revenue in 2016, and we anticipate the VA will take action against MiMedx in light of the facts in this report

Multiplying reported FY 2016 revenue of \$245.0m by 25%, this equates to \$61.3m of estimated VA sales in FY 2016. But our research indicates that this estimate is far too high.

Consider that in its FY 2015 [10K](#), MDXG disclosed that VA sales (via AvKare) amounted to ~24% of total revenue:

The Company provides products to Government accounts, including the Department of Veteran's Affairs, through a distributor relationship with AvKARE, Inc... In 2015, sales to AvKARE represented approximately 24% of total revenue.

Multiplying reported FY 2015 revenue of \$187.3m by 24%, we calculate that VA sales in FY 2015 amounted to \$45.0m. However, as discussed previously, whistleblowers have indicated that the company's end-of-quarter channel stuffing at the VA amounted to around \$2.5m per quarter or \$10m on an annualized basis. By deducting an estimated \$10m of channel stuffed revenue from \$45.0m, we estimate that MDXG's adjusted VA sales in FY 2015 amounted to \$35.0m:

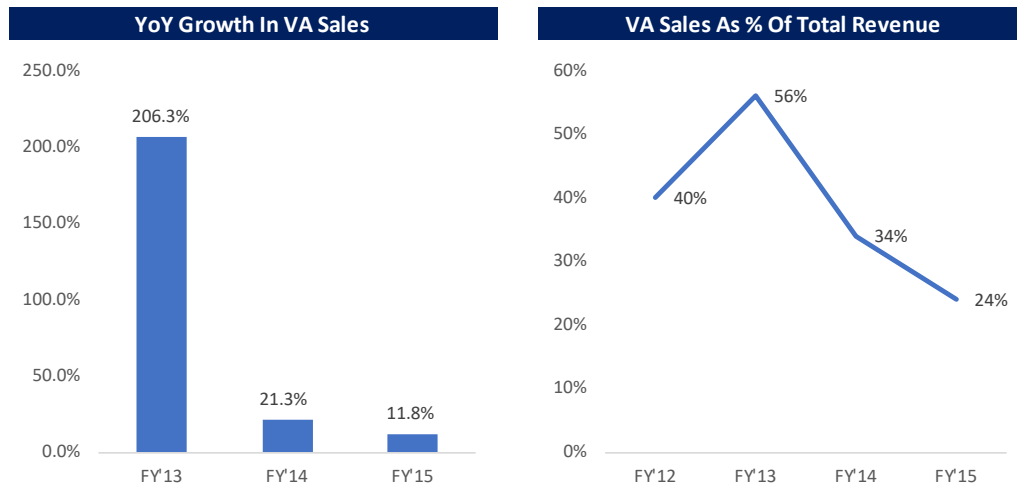
PP-Adjusted FY 2015 VA Sales

(\$ in millions)

Reported FY 2015 Revenue	\$187.3
(*) VA Sales as % of Total Revenue	24.0%
FY 2015 VA Sales	\$45.0
(-) Estimated Channel Stuffed Revenue	(\$10.0)
PP-Adjusted FY 2015 VA Sales	\$35.0

Source: MDXG filings with the SEC. Prescience Point estimates.

Next, as shown in the charts below, YoY growth in VA sales slowed down significantly in FY 2015 to 11.8%. Meanwhile, due to the robust growth of its non-VA business, VA revenue as a % of total revenue declined considerably from 56% in FY 2013 to 24% in FY 2015:



Putting it all together, taking into consideration our estimate that adjusted VA sales in FY 2015 totaled \$35.0m along with the modest growth in VA sales that same year, we believe VA sales in FY 2016 were nowhere close to \$61.3m as has been claimed, and instead were likely only modestly higher than \$35.0m.

Furthermore, given the rapidly slowing growth trajectory of VA sales, we believe that VA sales in FY 2018 are also likely to be close to \$35m. Thus, we believe that VA sales currently account for around 10% of total revenue.

The Government Won't Kill MDXG

Some critics have claimed that the ongoing SEC and DOJ investigations will likely result in enormous fines and other severe enforcement actions which will sink MDXG. But based on our research, we believe that any future government fine is unlikely to be sizable enough to put the company in distress.

We recently spoke with a Partner at a law firm who specializes in government investigations and security enforcement cases. When asked about the likelihood of the government levying a fine that will push MDXG into insolvency, he told us that,

1. Government fines have been significantly dialed back under the current, more corporate-friendly administration
2. Regardless of administration, the government almost never kills companies
3. The government is likely to be more lenient on MDXG given the remedial measures it has taken to clean-up its business (e.g. firing its CEO, CFO and COO for cause, clawing back compensation, hiring a restructuring firm, etc.)
4. Based on his cursory knowledge of MDXG, he predicted that a future fine would be sizable enough to send a warning but well in-line with what the company can afford; and
5. The shareholder suits are also unlikely to put MDXG in any distress given that it is not in the best interest of the suing shareholders to put the company under

The relevant excerpts from our conversation are provided below:

***Expert:** Under the current enforcement administrations, you're more likely to see corporate penalties dialed back significantly, despite what precedents existed during the eight years of the Obama administration Justice Department and SEC. And if you think about that, that's still was spillover from the effects of the corporate fraud cases in the early 2000s...The government felt very comfortable imposing very large penalties because of the mindset in the public that would support it. Now you have an administration that is much more likely to be corporation-friendly, look at the impact on shareholders, and ultimately those are considerations that figure into a settlement.*

***PP:** Is it accurate to say that regardless of administration, the level of fine that's ultimately determined is in part limited by what a company can afford to pay. In other words, regardless of the administration, the government is not in the business of killing a company or making it go bankrupt...Is that an accurate assessment?*

***Expert:** I would consider that to be a very accurate statement...Off the top of my head, where you can say that the commission of the DOJ has imposed a death penalty to shutdown a company, I cannot think of one...*

***PP:** So, MiMedx is obviously the company that we're looking at...what would be your assumption on the fine [that MiMedx receives]?*

***Expert:** They will not blow-up the company. The company will survive. The numbers will be much more in-line [with] something that the company can afford. And you're talking about multiple years of conduct. It's gonna be enough pain to send a warning to the company.*

...I cannot see any way the current administration and with the history of other cases, they would do anything more other than make it feel some pain in the settlement, but enable the company to move forward, particularly since it's doing all the correct remedial measures...

The above expert's conclusion that the government is highly reluctant to kill companies is supported by the following comments from SEC Commissioner Hester M. Pierce given during a recent [speech](#) in May 2018:

*Civil penalties against corporations are another area of concern and a reason that I have voted against some enforcement recommendations...After being the victims of the fraud that has led to an SEC investigation, shareholders are now paying a corporate penalty to resolve the matter...The responsible individuals have twice forced the shareholders to pay for their wrongdoing. **The SEC needs to be extremely careful in how and when it imposes corporate penalties to avoid making an already bad situation worse for shareholders.***

Finally, recent past cases also show that the government is highly reluctant to kill companies, and that fines typically do not exceed what a company can afford.

For example, Insys was one of the biggest and dirtiest frauds out there and operates in the opioid space, a space which has been the subject of intense government scrutiny. The company was massively bribing doctors and defrauding insurance, resulting in the death of numerous patients that became addicted to its powerful opioids. Yet, the government still allowed Insys to survive and fined them a manageable [\\$150m](#) payable over five years. Other recent examples include [Osiris](#) and [Shire](#) (former parent company of ABH), both of whom were fined less than the cash on their balance sheet.

Company	Reason For Gov't Investigation	Outcome Of Gov't Investigation	PP Comments
Insys Therapeutics	Insys was accused of paying kickbacks to physicians and defrauding insurance in order to induce usage of its opioid spray Subsys	In August 2018, Insys settled with DOJ by agreeing pay at least a \$150m fine payable over five years, and potentially make up to \$75m of additional payments.	In addition to committing massive fraud, Insys's actions killed and ruined the lives of countless patients who became addicted to Subsys. Despite this, the government still allowed the company to survive. Insys had >\$100m of cash & equivalents on its balance sheet as of 6/30/18, and thus could easily afford a \$150m fine payable over five years.
Osiris Therapeutics	Osiris was accused of overstating its revenue in a number of ways including channel stuffing, recognizing revenue using artificially inflated prices, etc.	In November 2017, Osiris settled with the SEC by agreeing to pay a \$1.5m fine.	Osiris only received what amounts to a slap on the wrist for fraudulent behavior which appears to be just as severe as what MDXG has committed.
Shire PLC	Shire was the former parent company of Advanced BioHealing (ABH). ABH was accused of employing kickbacks and other unlawful methods to induce usage its product Dermagraft	In January 2017, Shire settled with the DOJ by agreeing to pay a \$350m fine	Although a \$350m fine appears quite onerous on the surface, Shire is a \$multi-billion company and had >\$500m on its balance sheet, and thus could easily afford it. We believe the outcome of this case supports our conclusion that government fines are typically limited by what a company can afford.

The Market Often Overly Discounts Uncertainty

Look, we get it. Right now, the headlines surrounding MDXG are pretty scary. Extensive restatements. Executives fired for cause. A stock delisting. An auditor resignation. It is hard to be bullish in the face of so much negativity.

But as past cases show, the negative news flow that usually comes along with financial restatements and internal investigations does not mean that a company is doomed. In our experience, the market often overly discounts uncertainty. Time and again, we have seen the market automatically price-in the worst-case scenario without fully taking into consideration all of the prevailing evidence. Provided below are some examples which we believe are most relevant to MDXG's current situation:

- **Arthrocare:** In many ways, the current situation at MDXG reminds us of the Arthrocare scandal from more than ten years ago.

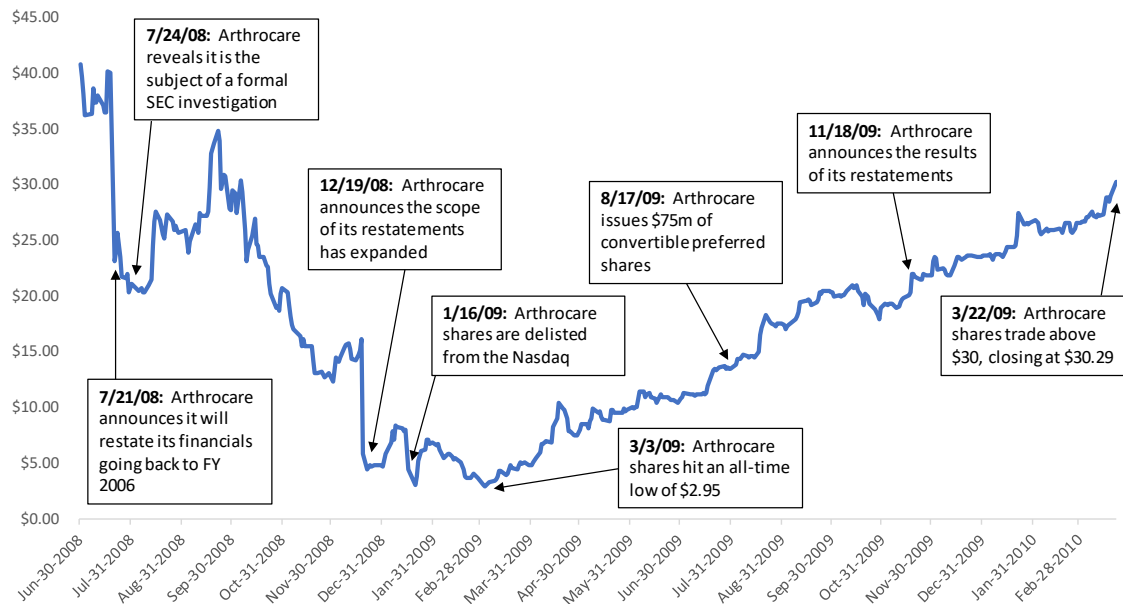
In late 2007, Arthrocare was [accused](#) by short sellers of channel stuffing and insurance fraud. The first shoe dropped in [July 2008](#) when the company announced that its financial statements going back to 2006 would have to be restated due to revenue recognition issues. That same month, the company also announced that it was the subject of a formal SEC investigation. In [December 2008](#), the company revealed that it had identified additional accounting irregularities and that the scope of its restatements had expanded to include fiscal years 2000 through 2005. Then, in [January 2009](#), its shares were delisted from the Nasdaq.

As can be seen from the above, the developments which initially transpired at Arthrocare were remarkably similar to those at MDXG, and the headlines were similarly scary. Also, like MDXG, Arthrocare kept investors largely in the dark during its restatement process and did not issue any updates on the ongoing performance of the business.

So how did the rest of this story play out?

On [November 18, 2009](#), Arthrocare announced that it had completed its restatements after nearly sixteen months of work. The results of the restatements revealed that Arthrocare's revenue had been inflated by only a modest amount from end-of-quarter channel stuffing – Total revenue in 2007, 2006, 2005 and 2004 were reduced by 12%, 7%, 4% and 1%, respectively. After hitting a low of \$2.95 following its delisting, Arthrocare shares subsequently rallied and a little over a year later were trading above \$30, representing a 10 bagger from the bottom. The company was eventually sold a few years later to Smith & Nephew for \$48.25 per share.

The Situation At MDXG Reminds Us Of Arthrocare Prior To Its Eventual Recovery



- Advanced Emissions Solutions:** The recent resignation of E&Y as MDXG’s auditor has created a significant amount of anxiety amongst investors. Adding to this anxiety was the [8-K](#) that MDXG filed on December 7th which outlined the adverse audit events which occurred prior to E&Y’s resignation.

These adverse events included the identification of insufficient internal controls, the need for an expanded audit scope, and E&Y’s determination that it could not rely on representations from management due to the presence of some legacy personnel.

While the resignation of an auditor during a restatement process is certainly not a positive for MDXG, we have seen similar events happen to other companies undergoing restatements. These companies subsequently hired a new auditor, completed their restatements, and were relisted.

One recent example is Advanced Emissions Solutions (“ADES”). ADES initially engaged KPMG as its outside auditor in May 2013. In [August 2014](#), the company revealed that its prior financial statements for FY 2011 and FY 2012 could no longer be relied upon and would have to be restated. Then, on January 23, 2015, KPMG abruptly resigned as ADES’s auditor.

In an [8-K](#) providing further detail on KPMG’s resignation, a number of adverse audit events were disclosed. This included the identification of insufficient internal controls along with the identification of numerous potential accounting irregularities. Perhaps the most concerning adverse event was KPMG’s determination that it could no longer rely on management representations for the following reasons:

In addition, KPMG expressed to management and the Audit Committee its concern that there is an inappropriate tone at the top, discontent with the Company’s timeliness and responsiveness to its requests for information and inability to determine whether management has made available all financial records and related data. In giving the

Company its resignation notice, KPMG referenced the issues noted above and its inability to rely on management's representations.

(Source: ADES 8-K dated 1/23/2015)

As can be seen from the above, the adverse events that KPMG identified appeared to be just as, if not more, severe than what E&Y identified during its tenure as MDXG's auditor, creating significant doubt amongst investors about not only the accuracy of ADES's financials but the viability of its business as well.

So how did the rest of this story play out?

In [June 2015](#), ADES managed to replace KPMG by hiring Hein & Associates as its new outside auditor. The company undertook a corporate restructuring and replaced several of its senior executives. After almost two years of work, the company completed its financial restatement in [April 2016](#). Soon after, in [July 2016](#), its shares were relisted on the NASDAQ. After cratering to an all-time low of \$2.75 during its restatement process, ADES shares currently trade at \$10.85, an almost 300% increase from the bottom.

While we believe the above examples are most relevant to MDXG, there are many others. A more recent example is MDXG's competitor Osiris whose stock has almost [quintupled](#) since cratering to an all-time low of \$2.68 during its lengthy financial restatement process, a process which was eventually [completed](#) in March 2017.

Valuation

With MDXG trading in the \$2s and priced for bankruptcy, very little has to go right in order for investors to realize significant gains.

To illustrate, provided below is a sensitivity analysis of MDXG's implied share price based on assumptions around revenue retention and valuation multiples.

At the midpoint of our valuation, we have assumed that MDXG's revenue will stabilize at \$272m once the current controversy, which has weighed heavily on its business, clears. This represents a substantial 30% decline from MDXG's annualized Q2 2018 revenue guidance of \$388m. By applying a 3.5x sales multiple, which is in line with peers who trade at an average of 3.6x LTM revenue (*See Appendix*), we estimate that MDXG shares are worth \$8.09, 274.5% higher than the current share price.

Even in a severe downside scenario where we assume revenue stabilizes at \$194m, representing a 50% decline from annualized Q2 2018 guidance, we estimate that MDXG shares would still be worth at least \$4.13, 91.2% higher than the current share price.

MDXG Share Price Sensitivity Analysis ⁽¹⁾

		Revenue Retained: % / \$ ^{(2) (3)}						
		50% / \$194m	60% / \$233m	65% / \$252m	70% / \$272m	75% / \$291m	80% / \$310m	85% / \$330m
Valuation Multiple	2.5x	\$4.13	\$4.95	\$5.36	\$5.78	\$6.19	\$6.60	\$7.01
	3.0x	\$4.95	\$5.94	\$6.44	\$6.93	\$7.43	\$7.92	\$8.42
	3.5x	\$5.78	\$6.93	\$7.51	\$8.09	\$8.66	\$9.24	\$9.82
	4.0x	\$6.60	\$7.92	\$8.58	\$9.24	\$9.90	\$10.56	\$11.22
	4.5x	\$7.43	\$8.91	\$9.65	\$10.40	\$11.14	\$11.88	\$12.63

(1) Based on 117.5m fully diluted shares outstanding.

(2) Revenue retained defined as amount of annualized Q2 2018 revenue retained.

(3) Assumes Q2 2018 revenue was in-line with the midpoint of guidance at \$97m, amounting to \$388m on an annualized basis.

The above reflects our views on MDXG's share price in the short-to-medium term. Over the long term, we expect MDXG to return to substantial growth due to its industry leading products, attractive end markets and promising pipeline of late-stage clinical trials for its Amniofix Injectable product. As such, we believe that MDXG's share price can eventually retake or even exceed its all-time high of \$18.25.

Appendix

MDXG Peer Group Valuation Metrics:

<i>(\$ in millions, Data as of 1/4/2019)</i>	Ticker	Market Cap	Enterprise Value	EV / LTM Revenue
Osiris Therapeutics, Inc.	OSIR	\$491.3	\$450.9	3.3x
Integra LifeSciences Holdings Corporation	IART	\$3,660.2	\$4,879.7	3.3x
Anika Therapeutics, Inc.	ANIK	\$470.4	\$321.4	3.0x
CryoLife, Inc.	CRY	\$957.5	\$1,140.7	4.6x
	Average			3.6x

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