Penumbra and its “killer catheter”

A tale of corporate greed and seemingly blatant disregard for patients’ lives
A short activist report by

Quintessential Capital Management (QCM)

11/9/20
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This report was created prior to Penumbra presenting its latest quarterly report so figures are not reflective of Q3 2020.

Quintessential is SHORT shares of Penumbra, Inc. (PEN)
QCM: Identifying, investigating and exposing corporate misconduct

• We uncover concealed information pertaining to catastrophic corporate malfeasance

• We collect overwhelming evidence owing to deep investigative due diligence

• Pure activist approach with element of surprise
# QCM’s Effectiveness as Short Activist

## Reduction in Market Capitalization Following Release of Thesis

(not necessarily indicative of fund’s performance)

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**Average Impact:** 89%
QCM opinion on Penumbra: Didomed by its own corporate greed

In our opinion and based on convincing evidence:

- Penumbra’s flagship “Jet 7” device is linked to **18 recorded deaths, 39 injuries:** this might be only the “tip of the iceberg”
- Jet 7 has **critical structural flaws** originating from **insufficient testing**
- The device is **unsafe** and **unmarketable:** we believe an **FDA class 1 recall highly likely**
- Penumbra **may have been highly misleading** in critical parts of its communication with doctors and investors
- Sources claim that **Mount Sinai Hospital** has put a **moratorium** on the device. Other **elite US institutions** are discouraging its use
- We flag **multiple malfunctions** with other other PEN devices questioning the Company’s **quality assurance** practices
- Despite appearances, financial **metrics are rapidly deteriorating**, anticipating a possible **sharp drop in sales**
- There have been **key staff resignations** and executives have been aggressively **liquidating their Penumbra shares**
- Leading product liability **law firms** are investigating and may eventually file a **class action lawsuit**

**Penumbra is threatened by product recall, brand devastation & exposure to legal liability**
METHODOLOGY

• Dozens of interviews with Neuroradiologists, former FDA senior staff, competitors, engineers.
• Examination of the device and its associated documents
• Due diligence on public FDA filings and databases
• Financial and strategic analysis
The Good

Penumbra has successfully pioneered the aspiration thrombectomy field
A primer on Penumbra Inc. (PEN)

- $9.4b market cap
- Industry: healthcare (medical devices)
- Focus: treatment of ischemic stroke
- Sales (LTM): 530m
- Company not a member of Advamed
Penumbra’s main product lines

55% of sales  45% of sales
Penumbra’s Jet 7 System

- Penumbra’s flagship product for the treatment of ischemic stroke.
- Equity research reports claim that ischemic stroke accounts for some 41% of total company revenue.
Thrombectomy through an aspiration catheter

Our own understanding of the procedure based on the literature we examined:

• Allows removal of blood clots causing strokes.
• Consists in introducing set of catheters (basically small tubes) in a patient’s artery.
• The *aspiration catheter* reaches the blood clot deep inside the brain and removes it from the artery through suction.

Illustration is for information purposes only does not represent the procedure in detail.
Penumbra’s history: early successes...

• Pioneered the market for aspiration catheters for the treatment of **acute ischemic stroke**

• **Rapid growth** until 2019 as Penumbra’s catheters were the **only option available**

• Recently larger **competitors gradually introduced new devices**
...but being on a roll rarely lasts...

- 2018: Microvention introduces its competing “Sofia” device, described as a “game changer”.

- **Sofia is considered vastly superior** to Penumbra’s original Jet 7 due to better **flexibility** and **trackability**, allowing faster surgeries.

- Sofia, and products from Medtronic, Stryker, Boston Scientific started **eroding Penumbra’s market share**.
...Penumbra has been losing market shares from larger peers in neuro

market share in neuro segment (QCM estimates)

At peak: 100%
Today: 57%
Penumbra’s small R&D budget is dwarfed by competitors.
...competitive threats led the Company to launch the Jet 7 Xtra Flex

• Launched in July 2019
• New technology makes the device far more flexible
• Performance matches Sofia’s
• Product approved through FDA 510(k) fast track clearance
The Bad
The Japan letter: trouble from the East...

- June 2020 Hirata, Penombra’s distributor in Japan, **warned** hospitals about the new Jet 7 Xtra Flex
- **11 deaths** caused by the Jet 7 malfunctioning in just 11 months
- letter mentions “**catheter expanding like a balloon, damaging the patient’s blood vessel**”
- Product subsequently **removed from Japanese market**

[link to the English Google translation of the letter]
What’s going on?
Jet 7 Xtra Flex is malfunctioning

• Penumbra altered the design of the original Jet 7 device to better compete with its peers
• Modifications presumably increased flexibility at the expense of structural integrity of the device
• Device seems prone to malfunction, at times with catastrophic consequences
The “deadly balloon”

• During the thrombectomy, doctors occasionally inject contrast medium inside the Jet 7 catheter to monitor blood flow

• At times, the injection causes the catheter to fail, expanding like a balloon inside a brain artery

• The expansion to several times the diameter of the artery, ruptures the blood vessel and causes massive hemorrhage and death
Photo and artist’s rendition of a ballooning Jet 7 rupturing an artery
Jet 7 catheter “inflating like a balloon” [real photographs from clinical settings]
When balloons kill...

• FDA Maude database lists 18 records of death* associated with a Jet 7 device malfunction since launch in July 2019

• Most accidents involve the “ballooning” of the catheter causing the rupture of brain arteries.

*Based on the entries we reviewed, three entries might be duplicates. 3 additional deaths occurred in Japan and do not show up on the Maude

[LINK to the Maude database]
A typical Jet 7 death report
(they sadly almost all look alike)

During the procedure, the physician injected contrast through the jet7 and the artery ruptured. Subsequently, the patient expired.
The breaking distal tip of the Jet 7...

• Notwithstanding contrast injections, the device may have malfunctioned over 200 times in 16 months*.

• Distal tip of the catheter tends to break and occasionally detach inside a patient’s brain artery, often causing injuries and requiring complex interventions to retrieve it.

• The breakage occurs almost always in the very same spot, suggesting a design flaw

*Source: Maude FDA database. True figures may be higher due to underreporting
...frequently injuring patients..

• **39 injuries** due to Jet 7 malfunction since launch

• Most injuries involved the breaking of the device’s distal tip.

*a number of entries could be duplicates, however actual number may be higher due to underreporting*
...or malfunctioning

• The Jet 7 device failed in at least 224* instances since July 2019 (launch date of Xtra Flex).
• Again, most cases involved the breaking of the distal tip.

* a number of entries could be duplicates

LINK to the Maude database
Why is this important?

- Presence of fractures, exposed coils, ballooning suggest a **systematic structural integrity issue** with the Jet 7
- All surgeons we questioned assume catheters are safe for hand injection of contrast media. Many (20-50%) do so on a regular basis during a thrombectomy.
- With one possible exception, to our knowledge competing devices have not resulted in any confirmed deaths, far fewer injuries and malfunctions*

The Jet 7 device is **defective** and **unsafe**.

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*this statement is based on our analysis of the Maude database, which an imperfect tool. We did find one patient’s death associated with a competitors device. However, Upon reading the accident report we are of the opinion that the issue was likely human error rather than a malfunction
“We were withdrawing the [Jet 7] catheter from the body and the catheter literally just broke with a clot inside of it.

Same thing happened to another colleague, then happened to me again. To have a catheter break on you like that during a procedure is really devastating.

I don’t see how you can morally or medical-legally use this product [Xtra Flex] anymore”
SMOKING GUNS!
We observed a Jet 7 failure with our own eyes

• Quintessential has obtained a functioning Jet 7 device
• Through an affiliate, we informally tested the device injecting saline solution
• As expected, the device broke and inflated like a balloon with minimal pressure
• The event that we captured in a video, would have injured or killed the patient had it happened inside the body.

A Jet 7 Flex device in the hands of Quintessential Capital Management
How could this happen?
Can greed trump common sense and ethics?

In our opinion:

• Penumbra **rushed** to modify its Jet 7 device to face its rivals.

• Flexibility achieved **at the expense of structural integrity**.

• **Insufficient testing** of new device

• **Dangerous** device put on the market
Inadequate testing?

• Jet 7 device **pressure tested at 45 psi** for 30 seconds (this meets FDA requirements)

• **10cc syringe** used to inject contrast media into a catheter routinely **exceeds 80 psi**

• Jet 7 not tested for real world use

  ➢ **Contrast media injection may cause Jet 7 catheter to fail**

• Competing Sofia catheter has been pressure tested at 300 psi!
Pressure generated by a syringe for contrast injection exceed the Jet 7 test limit!

Excerpt for the Jet 7 FDA clearance application

Chart shows pressure generated by syringes of different volumes. The 10cc syringe used for contrast injection exceed the test threshold for the Jet 7.
The Ugly
July 27th notice to healthcare providers

- Over one month after the “Japan letter”, Penumbra warned doctors to exercise caution with the new device.
- The letter warned doctors not to inject contrast media into the Jet 7 aspiration catheter, mentioned only risk of death/injury
late communication

• Penumbra issued a notice on July 27th:
  • 12 months after launch of Jet 7
  • 9 months after the first patient was killed.
  • 5 weeks after the warning by the Japanese distributor

• By then:
  • Some 15 people had already died in the US and 3 in Japan*
  • Many more injured

Penumbra’s delay to issue a warning may have resulted in avoidable deaths and injuries

* Figures based on our understanding of the Maude database.
…incomplete and ineffective

Japan letter (by 3rd party)

- **Explicitly** mentions number of deaths occurred
- Describes **in detail** how the device likely failed
- Resulted in taking the **device off the market**

US letter (by Penumbra)

- Mentions **only a risk** of death (not actual deaths occurred)
- May have **failed to reach all surgeons** and failed to emphasize the gravity of the issue
- Was **dismissed by many surgeons** as unimportant communication
"We did not see the notification letter, that’s the problem! I heard about it from a journalist"

"None of my colleagues anywhere that I know [...] in the Chicago area knew about it"

"Spoke with at least 5 physicians in 5 different hospitals and none of them had any idea about this"
Dr. Kurt Yaeger on Penumbra’s ineffective communication

“It doesn’t seem to be effectively communicated by Penumbra. People sort of heard of the deaths in the field and so some of that information has been kind of percolating through as a result […]"

I don’t know exactly what they’re doing, but it seems to me that what they’re doing is trying to sort of keep this [...] quiet “
Misleading?

- Penumbra’s notice seemed to blame doctors implying that accidents occurred because surgeons did not follow the correct instructions and warnings.
- In fact, Penumbra seems to have changed the instructions upon issuing the notice.
- In the original Jet 7 instructions seen by QCM, there was NO warning against hand injecting contrast media.
- A warning did exist against using high-pressure, automated, machine injections (implying that hand injections are okay).
Penumbra claims it warned doctors not to inject contrast into the aspiration catheter...

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**Notification to Healthcare Providers**

July 27, 2020

Dear Healthcare Provider:

Penumbra has received reports of Penumbra JET 7 Reperfusion Catheter with Xtra Flex technology (JET 7 Xtra Flex) distal tip expansion or rupture when used during injection of contrast media. JET 7 Xtra Flex may become susceptible to expansion or rupture during contrast injection due to distal tip weakening from manipulation against resistance or use with other manufacturers’ revascularization devices. Distal tip expansion or rupture may cause vessel damage and subsequent patient injury or death.

Performing contrast injections through JET 7 Xtra Flex is not consistent with the intended use of the product or the Instructions for Use, which instructs the user to perform contrast injections through the guide catheter. The use of JET 7 Xtra Flex with other manufacturers’ revascularization devices is not an authorized use per the Instructions for Use. JET 7 Xtra Flex has not been tested for compatibility with other manufacturers’ revascularization devices.
CEO doubles down on this statement in a call with investors...

“As soon as we did our evaluation [...] we made the determination that rather than rely on the IFU that existed that said, do not do a contrast injection through the catheter, we wanted to make that even more strong, more aware so that physicians would be notified.”

Adam Elsesser, CEO Pemumbra
In fact: we found NO WARNING!

- Company refused to hand out a copy of the Jet 7 IFU (competitors did so without problem with their own IFU)
- The original IFU we examined did not warn doctors against hand-injecting contrast
- Original IFU warned only against high-pressure machine injection (implying that hand injection is allowed)
SMOKING GUNS!
Proof 1: we obtained copies of original paper IFUs from various neuroradiologists

A photograph of the original paper IFU next to the Jet 7 packaging
IFU contains no warning against contrast injection by hand!

Penumbra Aspiration Pump
The Penumbra Aspiration Pump is indicated as a vacuum source for Penumbra Aspiration Systems.

CONTRAINDICATIONS
There are no known contraindications.

WARNINGS
• The device is intended for single use only. Do not resterilize or reuse. Resterilization and/or Reuse may result in ineffective catheter coating lubrication, which may result in high friction and the inability to access the target neurovasculature location.
• Do not use kinked or damaged devices. Do not use open or damaged packages. Return all damaged devices and packaging to the manufacturer/distributor.
• Do not use automated high-pressure contrast injection equipment with the Penumbra Reperfusion Catheter because it may damage the device.
Proof 2: copy of original online IFU

• We obtained prior online version of IFU using the “wayback machine”*.

• Wording on old IFU does not include hand injection of contrast media and only mentions high-pressure.

• Penumbra seems to have changed the Jet 7 online instructions and warned for hand-injection after the accidents took place.

* The Wayback Machine is an internet tool that allows the user to retrieve old, deleted pages from the web.
Proof 3: journal articles

• In April 2020 a study was released by Dr. Spiotta: “Reflections on Direct Aspiration Thrombectomy”

• Study explicitly mentions possibility of injecting directly into the aspiration catheter

• Doctor Spiotta works on a regular basis as a consultant for Penumbra and is a known evangelist for its products.
Penumbra-affiliated doctor Spiotta promotes injecting contrast into aspiration catheter!

[Insert chart or diagram]

Link to Dr. Spiotta payments summary
“they [Penumbra] are trying to blame it on the contrast which does not make any sense, because we use contrast ALWAYS through any catheter, it’s very common to use it through the aspiration catheter […] You can’t give me a catheter and tell me you can’t use contrast with it, they’re designed for that.”
Why we believe this device should be taken off the market
Very high absolute number number of avoidable deaths, injuries and malfunctions

Jet 7 Xtra Flex statistics from FDA Maude database

Malfunctions: 230
Injuries: 39
Deaths: 15

*figures for death are corrected for likely duplicates, but excludes deaths occurred in Japan
A first look at the Maude database may suggest that Jet 7 accidents may be over-represented vs comps even considering market shares.

QCM very rough estimates using notoriously imprecise MAUDE FDA database and our market shares estimates.

*we found a single death associated with a competitor, but based on the accident narrative, the event looked to us more like a procedural issue than a malfunction.
Malfunctions, injuries persist despite July 27th notice

• 48 new Jet 7 malfunctions, 1 or injury appeared in the FDA database since Penumbra’s notice to doctors in late July
• Luckily no new recorded deaths
• Most malfunctions still involve breaking of distal tip or ballooning
Recorded deaths are only tip of the iceberg? We think so

• Misattribution to other causes
• Misattribution to other devices
• Reporting bias
• Delays in data entry
• Guidant precedent (10x underreporting)

➢ Actual number of victims may be higher
“Rupturing of the vessel is a known complication that many doctors might not recognize as being caused by the device. Due to misattribution and reporting bias, actual numbers might be much larger”
Doctor at Radiology and Neurosurgery at Stanford

“I am surprised that the product is not recalled. This is clearly a design problem.”

“Weak structural integrity means device likely to fail in other circumstances (e.g. with other devices, heavy use, etc.)”
Prior catheter recalls happened despite far fewer injuries, no deaths vs Jet 7!

- Catheters approved through 510k clearance are frequently recalled
- Fetch 2 (Boston Scientific)
- Shuttle Select (Cook Medical)
- Both devices recalled after only 13 and 4 injuries respectively
FDA rules are clear: dangerous medical devices are subject to recall

“If [...] FDA finds that there is a reasonable probability that a device intended for human use would cause serious, adverse health consequences or death, the FDA may issue a cease distribution”

Mandatory Device Recalls - 21 CFR 810

Medical device recalls are usually conducted voluntarily by the manufacturer under 21 CFR 7. In rare instances, where the manufacturer or importer fails to voluntarily recall a device that is a risk to health, FDA may issue a recall order to the manufacturer under 21 CFR 810, Medical Device Recall Authority. 21 CFR 810 describes the procedures the FDA will follow in exercising its medical device recall authority under section 518(e) of the Federal Food, Drug, and Cosmetic Act (Act).

If, after providing the appropriate person with an opportunity to consult with the agency, FDA finds that there is a reasonable probability that a device intended for human use would cause serious, adverse health consequences or death, the FDA may issue a cease distribution and notification order requiring the person named in the order to immediately:

- cease distribution of the device;
SMOKING GUNS!
Formal expert opinion

QCM has received a formal assessment on the Jet 7 regulatory situation and its likely developments
Steven S. Brooks, MD MBA FACC


- FDA Medical Officer, Office of Device Evaluation (ODE), Division of Cardiovascular Devices (DCD), Peripheral Interventional Devices Branch (PIDB) 2007-2014

- VP Regulatory Affairs & Health Economics Ablative Solutions 2015-2017

- Expert Consultant NDA Partners 2016-Present
Steven Brooks MD: formal opinion

• Jet7 Flex malfunction carries a very high risk of patient injury and death
• Mechanism of malfunction is poorly mitigated by labeling modifications
• Highly likely FDA will investigate and issue Class 1 recall (or already is)
• Possibility of legal action for denials and misleading characterizations of injuries and their inadequate responses
• Revenues are likely to be damaged as doctors shift to competing devices
In conclusion, the Jet7 Flex catheter appears to have an important design flaw. While it passed premarket testing to achieve 510(k) clearance, the boundary conditions and test criteria did not reflect real world use, or the device was not developed to high enough tolerances for real world use. Regardless, the product has an extremely high safety risk that can result in stroke or death. Nothing short of not using the devices will fully protect patients for this risk. Pre-procedural inspection and in-factory visual inspection of the catheters are clearly not curtailing this risk. Labeling mitigations will not adequately penetrate to all operators and may be inadequate anyway. It seems highly likely that FDA will investigate this product, and if/when they do, it is likely that they will mandate a Class 1 recall. Penumbra’s revenues are likely to be damaged by decreased sales and the possibility of legal action for their denials and misleading characterizations of the injuries and their inadequate responses in the face of the malfunctions.

Steven S. Brooks, MD
Expert Consultant NDA Partners
Quotes by industry experts
Former FDA (consultant): “I think they’re screwed!”

“I wouldn’t be surprised if there wasn’t an FDA auditor reviewing all the records at Penumbra”

“It wouldn’t surprise me if they were doing more work AFTER the notification... just because the company put a band aid on it doesn’t mean the agency will accept that...”
Senior Neuroradiologist at major US hospital: “Probability of recall? If everyone was behaving as they should, 100% ...

“unfathomable that they’d leave this on the market…”

“what they’re doing is trying to fix this, and will sneak this through for the next 2-3 months and then release a new catheter and pull all of these…”
Meanwhile at Penumbra...

Executive behavior seems to suggest that management if aware of serious problems brewing at the Company
CEO Adam Elsesser increased **selling** Penumbra’s shares since the Jet 7 trouble begun...
CIO and co-founder Arani Bose liquidated 50% of his shares since the trouble begun...
Former CFO and President Sri Kosaraju liquidating his shares

Sofia launch

Xtra Flex launch

Deaths and injuries mount
Fleeing a sinking ship? Plenty of resignations at Penumbra

• Sri Kosaraju – former CFO & President at PEN
• Daniel Davis – Chief commercial officer
• Theo Jourdan – Director of vascular strategy
• Grant Weenig – VP of product strategy
• Kavi Vyas – global head of embolization
• David Hasselbach – VP of vascular strategy

• Plus at least 11 senior sales managers and many others
Fleeing a sinking ship? Sri Kosaraju

• Promoted to CFO and President in August 2019
• Replaced as CFO (but stayed on as president) in November of 2019
• Resigned as president in May 2020
• Joined a non-profit (?!)

Was Sri spooked by anything going on at Penumbra as he left his new CFO position only three months into the role?
A 5-fold increase in legal job openings. Is Penumbra “lawyering up”? 

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Based on LinkedIn data. Excludes subsidiaries.
First cracks in financials?

Data obtained from S&P Capital IQ
First major cracks showing in the numbers*

- **Competition, quality issues** prominent in PEN’s financials.
- **Sharp drop** in cash-generation
- Ballooning **working capital**
- Rapid and substantial **gross margin compression**
- Double-digit contraction in revenue
- Recent quarter (Q3) was stronger, but led from peripheral division

* this report was created prior to Penumbra presenting its latest quarterly report so figures are not reflective of Q3 2020.
...Penumbra has been losing market share from larger peers in neuro
Free cash flow generation took a turn for the worse since the Jet 7 flex was introduced...
...driven by receivables and inventories, ballooning like a Jet 7 catheter...
Cash shortfall financed by share issues
Sharp gross margin compression since Jet 7 issues began
Revenue growth rate has sharply contracted
What happens when the full situation becomes public knowledge?
Jet 7 recall a may be a near-existential threat for Penumbra

• Stroke business accounts for some 40% of Penumbra’s revenue
• Neuro about 55% and likely to be severely impacted by a Jet 7 recall
• Peripheral business is the remaining 45% and will likely suffer from a damaged brand
• Warning signs may point to issues with the peripheral division
• Potentially most company’s business may be under threat
Indigo system with Lightning: early signs of trouble in peripheral division?

• Latest peripheral product added in July.
• Maude: **65 malfunction** records in 3 months.
• Malfunctions seem alike, suggesting another **engineering flaw**.
• Is this issue a further sign of poor design and quality control at Penumbra?

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65 malfunction records
Researchers are coming out with studies documenting the Jet 7’s malfunctions!

American Society of Neuroradiology

Doctors from Mount Sinai claim are working at additional studies

- Paper analyzing patients deaths in New York and in Maryland using the Jet 7 Flex
- Analysis of cases through the Maude database
Our sources suggest that elite US institutions may already be ceasing to use the device or discouraging it.
Dr. Tareq Kass-Hout: “I stopped using the Jet7”
Medical Director of Neurosciences Inpatient Operations and Director of the Neuroendovascular Service at UChicago Medicine

“I stopped using [the Jet 7] since I read the letter... how about others? At least 3 people he knows said they’d stop using it until we figure out what’s going on... everyone agreed let’s not use it...”
Dr. Kurt Yaeger: “Mt. Sinai moratorium on the Jet 7”

“Mt. Sinai faculty put a moratorium on Xtra Flex and is not using it at all. We shifted to other catheters. So yeah, has a big impact on them as a company and we’re starting to drift away from their devices. This is not just me, whole institution has gone this way”
A menacing product-liability class action coming? Yes, in our opinion

• Penumbra may have **substantial liability exposure** for deaths and injuries occurring before their July 27th notice.

• The Xtra Flex catheter has a **demonstrated structural flaw** that resulted in deaths and injuries.

• The original instructions did **not** warn surgeons against using **hand** injection of contrast media.
It’s hard to estimate liability exposure, but we think it could be significant...

- # of US Maude documented deaths: 14*
- # of Maude documented injuries: 39
- Damages per death/injury: $2-10m (qcm educated guess)
- Real number of victims could be higher (due to bias, underreporting, misattribution, etc.)

Liability exposure might be of the order of **hundreds of millions US$** or possibly exceeding one billion **if punitive damages apply**

*removed likely duplicates from the count and excluded victims in Japan*
Penumbra is already overvalued at 16.6x sales and 250x EBITDA!
Valuation assumptions

- Jet 7 **recall** hits at least 50% of stroke business
- **Full legal liability*** materializes
- Sales multiples revert to peers’ median
- Brand and sales in non-stroke are unaffected

* Estimating legal liability is notoriously hard. Here we assumed what we believe is close to a worst-case-scenario with large settlements per victim and 4x punitive damages. On the other hand, this estimate may prove conservative if, as we believe is the case, additional victims are identified beyond those documented in the Maude database.
So, who much is Penumbra worth? Less than $2bn in our opinion

- 79% downside

[Bar chart showing US$ millions with categories: Market Cap, Loss of stroke business, Legal liability, Multiples Compression, Fair value. The chart indicates a significant decrease in value.]
Conclusion, in our opinion:

• Key product with documented record of death facing likely recall
• Potentially fatal brand devastation
• Looming product liability lawsuit
• At least 40% of revenue under direct threat
• Intense competition from stronger competitors
• We question management’s ethics in behavior and communication

Penumbra is a doomed company, and our price target is $55
QCM is sharing this report with relevant authorities and law firms

• Regulators
• Elite hospitals and stroke centers
• Large shareholders
• Sell side analysts
• Patient Advocacy Groups

• Top medical malpractice & product liability law firms
This is just the beginning

We will make public additional documents in the next few days.

STAY TUNED follow us on Twitter @qcmfunds
## Past short activist campaigns by QCM

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Location, Exchange</th>
<th>Outcome</th>
<th>Price Impact (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akazoo</td>
<td>NASDAQ (USA)</td>
<td>Company exposed by QCM as total fraud is currently in liquidation. Management sued by the SEC for securities fraud.</td>
<td>100%</td>
</tr>
<tr>
<td>Bio-on</td>
<td>AIM (Italy)</td>
<td>Company exposed by QCM as total fraud is currently in liquidation. Management arrested and facing criminal charges.</td>
<td>100%</td>
</tr>
<tr>
<td>Aphria</td>
<td>Canada (NYSE)</td>
<td>Company exposed by QCM as a scheme to enrich insiders with conflicted acquisitions: executives and board members fired when internal review confirmed findings.</td>
<td>43%</td>
</tr>
<tr>
<td>Folli Follie</td>
<td>Greece, (Athens)</td>
<td>Company exposed by QCM as total fraud is currently in liquidation. Management arrested and facing criminal charges.</td>
<td>100%</td>
</tr>
<tr>
<td>Globo</td>
<td>Greece (London AIM)</td>
<td>Company exposed by QCM as total fraud ceased to exist as a commercial entity.</td>
<td>100%</td>
</tr>
<tr>
<td>Ability Inc</td>
<td>Israel (NASDAQ)</td>
<td>Company exposed by QCM as total fraud. Price collapsed, entire board resigned.</td>
<td>100%</td>
</tr>
<tr>
<td>American Addiction Centers</td>
<td>United States (NYSE)</td>
<td>QCM (together with Bleecker) exposed serious fraudulent practices.</td>
<td>100%</td>
</tr>
<tr>
<td>Eros International</td>
<td>India (NYSE)</td>
<td>Exposed as total fraud by Hindenburg (collaboration with QCM).</td>
<td>90%</td>
</tr>
</tbody>
</table>
Selection of QCM campaign outcomes
Our latest campaign against Bio-on resulted in the arrest of the company’s executives and bankruptcy of the company.
Folli Follie

Our campaign against Folli Follie resulted in the arrest of the company’s executives and bankruptcy of the company.
Akazoo

For Quintessential, a Campaign Both Short and Sweet

Just two weeks after short seller Gabriel Grego blasted music streamer Akazoo, the company’s board ousts its CEO.

May 04, 2020