

Original research

Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter

James Caldwell ,¹ Ben McGuinness ,¹ Shane S Lee,¹ P Alan Barber,^{2,3} Andrew Holden,⁴ Teddy Wu,⁵ Martin Krauss,⁶ Andrew Laing,⁶ Wayne Collecutt,⁶ David S Liebeskind,⁷ Steven W Hetts ,⁸ Stefan Brew¹

► Additional material for this paper is available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/neurintsurg-2021-018318>).

¹Nororadiology, Auckland City Hospital, Auckland, New Zealand

²Medicine, University of Auckland, Auckland, New Zealand

³Department of Neurology, Auckland City Hospital, Auckland, New Zealand

⁴Interventional Radiology, Auckland City Hospital, Auckland, New Zealand

⁵Department of Neurology, Christchurch Hospital, Christchurch, New Zealand

⁶Radiology, Christchurch Hospital, Christchurch, New Zealand

⁷Neurology, UCLA, Los Angeles, California, USA

⁸Radiology, UCSF, San Francisco, California, USA

Correspondence to

Dr James Caldwell,
Nororadiology, Auckland
City Hospital, Auckland, New
Zealand; jamesrichardcaldwell@gmail.com

Received 11 October 2021

Accepted 1 December 2021

Published Online First

14 December 2021

ABSTRACT

Background We describe the first-in-human experience using the Route 92 Medical Aspiration System to perform thrombectomy in the initial 45 consecutive stroke patients enrolled in the SUMMIT NZ trial. This aspiration system includes a specifically designed delivery catheter which enables delivery of 0.070 inch and 0.088 inch aspiration catheters.

Methods The SUMMIT NZ trial is a prospective, multicenter, single-arm study with core lab imaging adjudication. Patients presenting with acute ischemic stroke from large vessel occlusion are eligible to enrol. The study has had three phases which transitioned from use of the 0.070 inch to the 0.088 inch catheter.

Results Vessel occlusions were located in the internal carotid artery (27%), M1 (60%) and M2 (13%). Median baseline National Institutes of Health Stroke Scale (NIHSS) was 16 (IQR 10). Across the three phases, the first-pass reperfusion rate of modified Thrombolysis In Cerebral Infarction (mTICI) $\geq 2b$ was 62% using the Route 92 Medical system; this rate was 29% in phase 1, 56% in phase 2, and 80% in phase 3. The first-pass reperfusion rate of mTICI $\geq 2c$ was 42% overall, 29% in phase 1, 33% in phase 2, and 55% in phase 3. A final reperfusion rate of mTICI $\geq 2b$ was achieved in 96% of cases, with 36% of cases using adjunctive devices. Patients had an average improvement of 6.7 points in NIHSS from baseline at 24 hours, and at 90 days 48% were functionally independent (modified Rankin Scale 0–2).

Conclusions In this early experience, the Route 92 Medical Aspiration System has been effective and safe. The system has design features that improve catheter deliverability and have the potential to increase first-pass reperfusion rates in aspiration thrombectomy.

tortuous curves and past vessel origins, such as the ophthalmic segment of the internal carotid artery (ICA).⁵ There is evidence that first pass reperfusion is most likely to be achieved when the aspiration catheter is close to the size of the vessel lumen,⁶ yet currently available aspiration catheters are undersized for the caliber of the typical M1 middle cerebral artery (MCA) segment. The Route 92 Medical aspiration system has design features to address these issues.

METHODS

The SUMMIT NZ trial is a prospective, multicenter, single-arm, open label study using the Route 92 Medical aspiration thrombectomy system. We report the results of the first 45 patients. For a summary of the study protocol see online supplemental appendix figure S1.

Patient selection

Eligible patients are those with ischemic stroke symptoms and an LVO in the ICA or MCA. Participants were enrolled following consent or assent from the patient or family, or when this was not possible following consensus of best interest for the patient being agreed by two physicians. The study was approved by the Health and Disability Ethics Committee of New Zealand and undertaken in two tertiary stroke hospitals. Stroke onset was defined as the time the patient was last known normal (LKN). Baseline and 24 hour stroke severity was assessed using the National Institutes of Health Stroke Scale (NIHSS). Successful reperfusion was defined as modified Thrombolysis In Cerebral Infarction (mTICI) score $\geq 2b$. The primary outcome was the proportion of patients achieving functional independence at 90 days, defined by a modified Rankin Scale (mRS) score of 0, 1 or 2. Secondary outcomes included: mRS score at 90 days; symptomatic intracranial hemorrhage; mortality at 7 days; and mortality at 90 days. Clinical scores were determined by members of the attending stroke team who were independent of the study.

Key inclusion criteria were: age ≥ 18 years; baseline NIHSS ≥ 6 ; pre-stroke mRS ≤ 2 ; angiographic confirmation of occlusion of the MCA (M1 or M2 segment) or ICA; investigator estimates that at least one pass with Route 92 Medical Reperfusion System can be completed within 24 hours of time last known well. Key exclusion criteria were: angiographic evidence of dissection in the extracranial or

INTRODUCTION

In patients with ischemic stroke due to large vessel occlusion (LVO), aspiration thrombectomy is an effective and commonly used thrombectomy technique. Studies using existing technology have shown first line aspiration thrombectomy to be non-inferior to thrombectomy with stent retrievers.^{1,2} However, there remains room for improvement in the rates of first pass reperfusion and reduction in the need for rescue therapy in aspiration thrombectomy.^{3,4}

Aspiration catheters, particularly large bore catheters, often are not able to navigate through



© Author(s) (or their employer(s)) 2022. No commercial re-use. See rights and permissions. Published by BMJ.

To cite: Caldwell J, McGuinness B, Lee SS, et al. *J NeurolIntervent Surg* 2022;14:1239–1243.

intracranial arteries; angiographic evidence of multiple vascular occlusions. Note that imaging was performed with CT (non-contrast CT of the brain, CT angiography of the head and neck, and CT perfusion).

Phases

During this first-in-human study, the technique used with the aspiration system evolved as follows.

Phase 1

Proof of concept: Tenzing 7 catheter facilitated delivery of 070 HiPoint aspiration catheter using commercially available 0.088 inch guide sheaths.

Phase 2

Full system: Tenzing 7 catheter facilitated delivery of telescoped 070 and 088 HiPoint aspiration catheter via the Base Camp Guide Sheath. During this phase of the study the protocol was amended to no longer include M2 MCA occlusions.

Phase 3

088 alone: Tenzing 8 catheter facilitated delivery of an 088 HiPoint aspiration catheter via the Base Camp Guide Sheath.

Five neurointerventionists and one general interventionist each with significant experience in performing mechanical thrombectomy were trained with the Route 92 Medical System before commencing the study. The majority of the cases were performed by three neurointerventionists who have performed over 250 cases of mechanical thrombectomy. Outside of this trial, mechanical thrombectomy at the study sites would typically involve primary aspiration thrombectomy or primary combined stent retriever and aspiration thrombectomy, with balloon-guide catheters not being frequently used.

System description

The Route 92 Medical Reperfusion System has some fundamental differences when compared with existing aspiration technologies. The first is the Tenzing delivery catheter which is specifically designed to enable delivery of 070 and 088 HiPoint aspiration catheters through tortuous anatomy and past vessel origins. The Tenzing comes in two sizes: the T7 for the 070 aspiration catheter, and the T8 for the 088 aspiration catheter. The Tenzing is initially advanced together with the aspiration catheter, leading the aspiration catheter with a soft tapered tip (see figure 1). ‘Ledge effect’ between the catheter and Tenzing is minimized as Tenzing almost completely fills the aspiration catheter lumen. The Tenzing has an inner lumen that can accommodate up to a 0.016 inch microwire and allows contrast injection for angiography.

The second notable difference with the Route 92 Medical System is that the 070 and 088 HiPoint aspiration catheters have pusher rails proximally. This ‘catheter on a stick’ design allows them to be independently controlled via the single rotating hemostatic valve (RHV) on the Base Camp Guide Sheath (see figure 2). This creates what is effectively a single, long, aspiration system that has aspiration force always at the tip of the leading component of the system. Aspiration (via vacuum pump) is also applied to this same R HV. A system that is manipulated via one R HV and has a single point of aspiration has been coined ‘Monopoint’.

The Route 92 system has a proprietary seal that results in transfer of aspiration force from the aspiration catheter to the Base Camp Guide Sheath. For example, if a large clot is ‘corked’

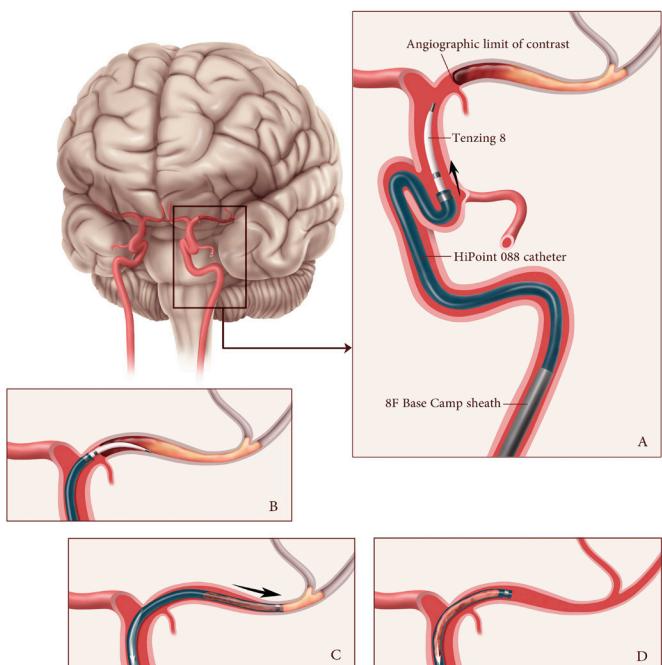


Figure 1 Illustration of the telescoped system at a middle cerebral artery embolus. (A) After positioning the 8 French Base Camp sheath within the carotid bulb, the 088 HiPoint catheter and the Tenzing 8 (T8) delivery catheter are advanced as a unit. In the majority of cases, this unit does not require a microwire in order to be advanced to the proximal face of the thrombus/embolus. (B) The T8 is advanced past the angiographic limit of contrast until the 088 HiPoint catheter tip is at or just past the contrast limit. At this point, no further forward tension is applied to the 088 HiPoint rail. (C) Withdrawal of the T8 creates an initial aspiration force and straightens the system, passively advancing the 088 catheter and initiating the ingestion of the thrombus/embolus into the 088 catheter lumen. (D) As pump aspiration is applied, the remaining thrombus/embolus is ingested into the catheter. The relatively short length of the HiPoint 088 catheter as well as the ‘stepping up’ to the 0.106 inch inner diameter of the Base Camp sheath combine to reduce both the resistance and time necessary for the thrombus/embolus to reach the aspiration canister.

at the end of the 088 HiPoint catheter as it is withdrawn into the Base Camp sheath, the aspiration force is automatically transferred to the tip of the Base Camp Sheath with the potential benefit of enabling either ingestion of any clot fragments or maintaining aspiration at the occluded tip of the catheter. This continuous aspiration is achievable with a single pump, rather than needing multiple sources of aspiration.

The system allows for the 088 aspiration catheter to be delivered to the face of an embolus in the M1 segment, either over Tenzing 8 alone or over the combination of the Tenzing 7 and 070 catheter. Having the 088 aspiration catheter in the M1 is desirable when the M1 is large enough; however, if the M1 appears too small to accommodate the 088 catheter it can be positioned more proximally in the carotid terminus. In this latter situation, aspiration is commenced on the 070 catheter at the clot face, and then the 070 catheter is withdrawn into the more proximal 088 catheter.

The following is a general description of the technical aspects of performing thrombectomy using the Route 92 aspiration system in the anterior circulation:

- The Base Camp 90 cm 8 French long sheath is inserted into the descending aorta over a 0.035 inch wire via the common

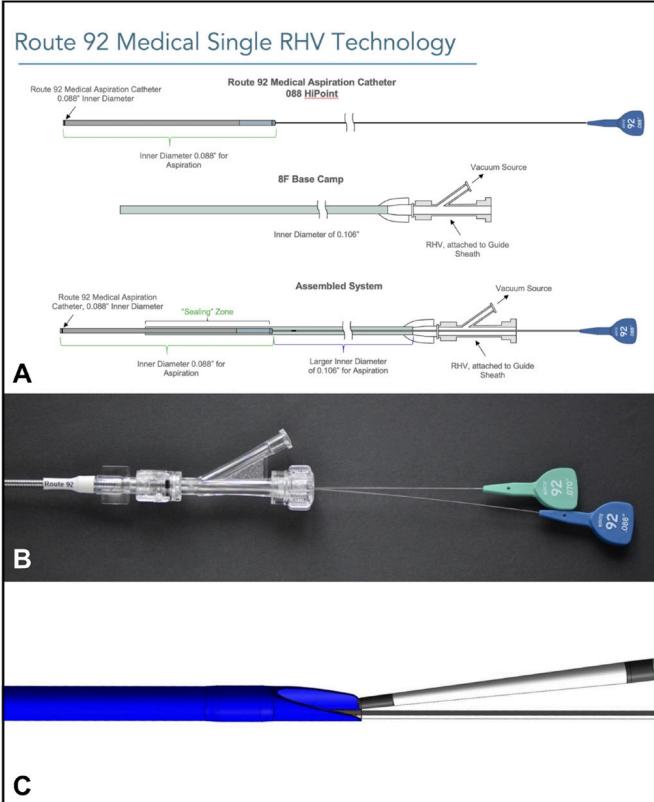


Figure 2 (A) Schematic diagram showing the 'catheter on a stick' design of the HiPoint 088 catheter with a proximal rail, and below this the Base Camp sheath. The lower drawing shows the combination of the 088 catheter within the Base Camp sheath, with the sealing zone between the two indicated (the 070 catheter and Tenzing are not shown). (B) Photograph of the Monopoint working area showing the pushers of both the HiPoint 070 and 088 catheters and the proximal end of the Base Camp guide catheter; flush or pump aspiration is applied through the side arm of the rotating hemostatic valve (RHV) (tubing not shown). (C) Engineering drawing showing the junction of the metal pusher rail of the Hipoint 088 with the aspiration catheter component (blue), with the tapered tip of the Tenzing delivery catheter (white with two gray distal markers) poised ready for insertion into it.

- femoral artery. It is then back bled and placed on continuous flush with an RHV.
- The Route 92 Medical Navigation catheter and 0.035 inch wire are used to position the tip of the Base Camp in the mid to lower cervical ICA.
 - Angiography is performed through the Base Camp.
 - Depending on the estimated vessel size at the site of occlusion, either the Tenzing 8 and 088 HiPoint catheter alone are introduced into the RHV, or the Tenzing 7, 070 HiPoint and 088 HiPoint as a coaxial system.
 - The Tenzing and HiPoint catheter are then advanced together with the Tenzing leading, until the tip of the Tenzing is at the site of occlusion (see figure 3, panel B).
 - The aspiration catheter is then advanced over Tenzing to the site of occlusion and the Tenzing is removed.
 - Aspiration is performed using a vacuum pump through the Monopoint sidearm (the RHV is attached to the Base Camp sheath).
 - The tubing is observed for signs of free flow of blood. If after 2 min the aspiration tubing has not shown free flow, then the aspiration catheter is slowly withdrawn.



Figure 3 (A) Lateral angiogram showing occlusion of the intracranial ICA. (B) Lateral fluoro save image showing the tip of the Tenzing 8 delivery catheter (arrowhead) at the proximal aspect of the occlusion and the tip of the HiPoint 088 catheter (arrow) as it is being delivered. (C) Lateral angiogram showing first pass mTICI 3 reperfusion. ICA, internal carotid artery; mTICI, Thrombolysis In Cerebral Infarction.

- Once free flow is observed through the aspiration tubing to the pump, aspiration is stopped and angiography is performed through the Base Camp. If no further thrombectomy is required, the common femoral arteriotomy is closed with a closure device.
- If further thrombectomy is required, the HiPoint catheter is removed and flushed using the Tenzing (with a saline syringe on the back of the Tenzing). The Tenzing and HiPoint catheter are then reintroduced into the Base Camp sheath and navigated to the clot face.
- If aspiration thrombectomy is not successful or an M2 occlusion is encountered, this can be treated with an appropriate stent retriever or smaller caliber aspiration catheter taken through the Route 92 Medical system.

RESULTS

There were 45 patients (22 (49%) women) with a mean age of 69.8 years enrolled in the study, of whom 19 (42%) were treated with intravenous thrombolysis. The site of LVO was ICA in 12 (26.6%), M1 segment of MCA in 27 (60.0%), and M2 segment of MCA in six (13.3%). The median baseline NIHSS was 16 (IQR 10). The median time from a patient being LKN to puncture was 4 hours (range 1.7–15.9 hours). Mechanical thrombectomy was performed under general anesthesia in 43 patients (96%), which is our local practice. See online supplemental appendix table S1 for further baseline characteristics.

For all patients across the three study phases the first pass reperfusion rate of mTICI $\geq 2b$ was 62% using the Route 92 Medical system; this rate was 29% in phase 1, 56% in phase 2, and 80% in phase 3 (see table 1). The first pass reperfusion rate of mTICI $\geq 2c$ was 42% overall; 29% in phase 1, 33% in phase 2, and 55% in phase 3. Across the three phases an overall final reperfusion rate of mTICI $\geq 2b$ was achieved in 96% of patients and the final reperfusion rate of mTICI $\geq 2c$ was 64%, with 36% of cases using adjunctive thrombectomy devices. There were 10 cases which used the 088 aspiration catheter as the primary aspiration device in the M1 segment, and these cases had a first pass mTICI $\geq 2b$ reperfusion rate of 83% (10/12). The Tenzing delivery catheter navigated to the embolus without needing a microwire in 71% (32/45) of cases. The mean number of passes performed with the Route 92 system was 1.6 (range 1–4). The median procedure time was 27 min overall (ranging from 6 min to 1 hour and 35 min), 34 min for phase 1, 28 min for phase 2, and 26 min for phase 3. No patients had symptomatic intracranial hemorrhage at 24 hours. Two patients had embolization to a new territory (4%), one during phase 1 and one during phase 2; none occurred during phase 3. There were two patients who had foci of air embolism on postoperative CT, both of which were

New devices and techniques

Table 1 Outcomes

Primary effectiveness endpoint—arterial reperfusion	
First pass reperfusion with Route 92 Medical system mTICI $\geq 2b$	% (n/N)
All cases	62% (28/45)
HiPoint 070 catheter alone (phase 1)	29% (2/7)
Hipoint 070 and 088 catheters (phase 2)	56% (10/18)
Hipoint 088 catheter alone (phase 3)	80% (16/20)
First pass reperfusion with Route 92 Medical system mTICI $\geq 2c$	% (n/N)
All cases	42% (19/45)
HiPoint 070 catheter alone (phase 1)	29% (2/7)
Hipoint 070 and 088 catheters (phase 2)	33% (6/18)
Hipoint 088 catheter alone (phase 3)	55% (11/20)
Arterial reperfusion end of procedure	
Final mTICI $\geq 2b$	95.6% (43/45)
Arterial reperfusion by vessel	
M1	100% (27/27)
M2	83.3% (5/6)
ICA	91.7% (11/12)
Use of additional thrombectomy devices	
All cases	36% (16/45)
HiPoint 070 catheter (phase 1)	57% (4/7)
Hipoint 070 and 088 catheter (phase 2)	39% (7/18)
Hipoint 088 catheter (phase 3)	25% (5/20)
Secondary endpoints—NIHSS and mRS*	
Early (n=43*)	Mean \pm SD (median)
NIHSS—24 hour follow-up	9.4 \pm 7.8 (7)
NIHSS—change from baseline	-6.7 \pm 8.5 (-8)
90 day (n=33**)	% (N/N)
Good clinical outcome at 90 days (mRS 0–2)	48.5% (16/33)
Mortality: mRS 6	15.2% (5/33)

*NIHSS not available for two subjects; **90 day outcome data available for 33 patients at the time of writing.

ICA, internal carotid artery; mRS, modified Rankin Scale; mTICI, modified Thrombolysis In Cerebral Infarction; NIHSS, National Institutes of Health Stroke Scale.

cases that required rescue therapy with stent retrievers. One of these cases likely had air introduced through the microcatheter used for rescue therapy with a stent retriever, as the air embolus was downstream within the territory that was not reperfused. The other case also involved a stent retriever for rescue therapy but it was not clear what had resulted in the air embolism. Patients had an average improvement of NIHSS of 6.7 points from baseline at 24 hours, and at 90 days 22 patients (49%) were functionally independent (mRS 0–2).

DISCUSSION

While aspiration thrombectomy is a widely used method for treating stroke patients with LVOs, there remains room for improvement in terms of deliverability of aspiration catheters, the caliber of these catheters and first pass reperfusion rates.

A widely known problem in performing aspiration thrombectomy is navigating large bore aspiration catheters around tortuous vessels. Our initial experience has shown the safety and effectiveness of the specifically designed tapered-tip delivery

catheter, the Tenzing, at delivering 0.070 inch and 0.088 inch aspiration catheters to their target vessels. Notably, the Tenzing was able to successfully deliver these large bore catheters without needing a microwire to direct its tip in the majority of cases (71%). The Tenzing-based delivery also has the potential benefit of not needing to cross a device distal to the embolus, as its tip can be positioned toward the proximal end of the thrombus/embolus. This has the theoretical advantage of being less likely to fragment the embolus, and making it more likely to remove it as a single specimen.⁷

Larger bore catheters have potential advantages in terms of increased suction force and flow rates.^{8 9} The likelihood of successful first pass aspiration is increased if the aspiration catheter approximates the size of the vessel in which the embolus has lodged; and benchtop testing suggests that use of an aspiration catheter of this size in the M1 segment should improve the rate of first pass reperfusion.^{8 10} The majority of currently available aspiration catheters for thrombectomy in the M1 segment are 0.070–0.074 inch with internal diameters of around 1.8 mm, which is significantly smaller than the average 3 mm luminal diameter of the mid M1 segment.^{11 12} A 0.088 inch aspiration catheter has a cross sectional area at its tip that is 49% larger than a 0.072 inch catheter, and this has been safely used to perform thrombectomy in the M1 segment in this study. An aspiration catheter of this caliber in the M1 segment could offer the added benefit of achieving near flow arrest.¹³ For M2 segment occlusions, where the typical vessel diameter is approximately 2.4 mm and too small to accommodate an 088 aspiration catheter, the 088 catheter can be positioned more proximally in the M1 segment in order to help slow antegrade flow. It is important to note that there are some patients who have a small caliber M1 segment which is not large enough for an 088 catheter, but this has been a minority of cases in our experience to date.

It is important to note that the technique used to perform thrombectomy using the Route 92 Medical system has evolved over the course of this first-in-human study, which makes the technique used in these cases somewhat heterogeneous. During the initial phase of the study the Tenzing 7 catheter was used to deliver the 070 HiPoint aspiration catheter using commercially available 0.088 inch guide sheaths. In the second phase the full Route 92 Medical system was used including the Tenzing 7 and telescoped 070 and 088 HiPoint aspiration catheters, with a very conservative approach taken, particularly using the 070 catheter to help with sizing of the M1 segment. In the latest study phase, the Tenzing 8 and HiPoint 088 aspiration catheter are predominantly being used alone, now that operators are comfortable taking the 088 directly to the M1 segment. Use of the 088 alone simplifies the system and makes primary use of the largest bore aspiration catheter, in order to maximize the likelihood of first pass reperfusion. The rate of first pass mTICI $\geq 2b$ reperfusion is highest during the latest phase of the study at 80% using the HiPoint 088 catheter, supporting the idea that first pass reperfusion rates can be improved with larger bore catheters.

Alternative devices/rescue therapy were used in 36% of cases overall, which is slightly higher than in some prior direct aspiration studies.^{1 14} However, the need for rescue therapy declined across the three study phases to 25% by phase 3, suggesting the need for adjunctive devices may reduce with primary use of the largest bore catheter. Some of the cases which required use of alternative devices were due to the need for a smaller caliber aspiration catheter or stent retriever to deal with an M2 occlusion that was observed following initial ICA or M1 thrombectomy, as the Route 92 system does not currently include a

smaller caliber aspiration catheter suitable for a small or medium sized M2 branch.

Two cases in this study were noted to have air emboli on post-operative CT relatively early in the study. One of these cases was attributed to microcatheter use, and the cause of the other was uncertain. While air emboli can occur with any large-bore catheterization system, the occurrence prompted consideration of potential steps to minimize this risk and discussion with the Clinical Events Monitor. Given the Route 92 system has a larger dead-space than standard aspiration thrombectomy systems, the use of 20 mL syringes is recommended when flushing or purging the dead-space.

Currently there are only case reports and preliminary data describing *in vivo* use of 088 aspiration catheters for stroke patients.^{15–17} Torabi and colleagues described the use of an 088 aspiration system in 34 patients and reported a first pass mTICI $\geq 2b$ reperfusion rate of 65%, slightly less than the 80% rate from phase 3 of this study. The rate of final mTICI $\geq 2b$ was similar at 91% and the adjunctive use of stent retrievers was slightly higher at 38%.¹⁷ The rate of first pass mTICI $\geq 2b$ reperfusion in phase 3 of this trial is better than the 57% rate seen with aspiration thrombectomy in the Compass trial with smaller caliber aspiration catheters.² While this study is one of the largest reported to date using 088 aspiration catheter technology for intracranial thrombectomy, the numbers remain relatively small and the trial is ongoing. Ideally, randomized studies will be performed to assess the relative performance of the next generation of large bore aspiration catheters against the current generation.

CONCLUSIONS

In this early experience, the Route 92 Medical Aspiration System has been effective and safe in LVO patients treated with thrombectomy. The system has design features that improve catheter deliverability. The Tenzing delivery catheter was found to be highly effective at delivering 070 and 088 aspiration catheters to the ICA and M1. The HiPoint 088 aspiration catheter was safe and effective for thrombectomy in the M1 segment. Future studies will determine to what degree this system is able to increase first pass reperfusion rates in aspiration thrombectomy.

Correction notice This article has been corrected since it first published. In the Abstract, 'phase 2%' has been corrected to 'phase 2'.

Contributors The manuscript was drafted by JC, reviewed by all authors and edited by SH, DL, AH, PAB, SB, TW, WC and BM. Figures were arranged by SL and JC. Figure 1 was produced by medical illustrator Mark Lefkowitz for Route 92 Medical who provided it for use in this manuscript. The images for Figure 2 were provided by Route 92 Medical and arranged by SL. Revisions were made and edited by JC, BM and PAB and reviewed by all authors. JC is the guarantor.

Funding This study was funded by Route 92 Medical (N/A).

Competing interests The study investigators were not remunerated for their involvement in this study or the production of the manuscript. Dr Brew, Dr McGuinness, Dr Caldwell and Dr Lee have consulting agreements with Route 92 Medical.

Patient consent for publication Not applicable.

Ethics approval This study involves human participants and was approved by Northern B Health and Disability Ethics Committee of New Zealand. Ethics reference number: 19/NTB/122. Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request. Trial data is available from the corresponding author on reasonable request.

Addendum Route 92 Medical, Tenzing & Base Camp are registered trademarks of Route 92 Medical Inc (San Mateo, CA). T7, Hipoint, and Monopoint are trademarks of Route 92 Medical, Inc (San Mateo, CA).

Supplemental material This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been peer-reviewed. Any opinions or recommendations discussed are solely those of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and responsibility arising from any reliance placed on the content. Where the content includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.

ORCID iDs

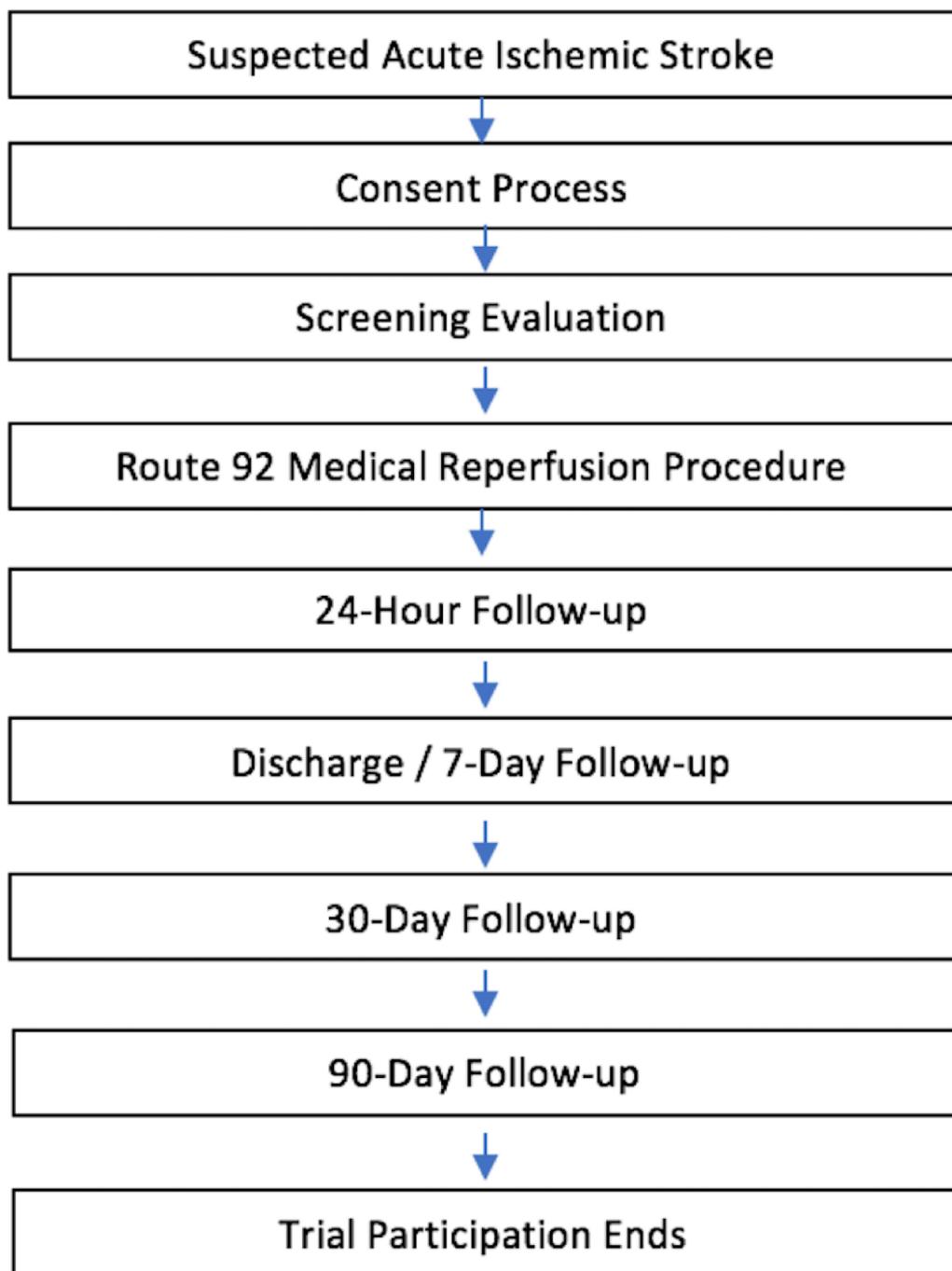
James Caldwell <http://orcid.org/0000-0002-0480-1206>

Ben McGuinness <http://orcid.org/0000-0001-6685-4154>

Steven W Hetts <http://orcid.org/0000-0001-5885-7259>

REFERENCES

- 1 Lapergue B, Blanc R, Gory B, et al. Effect of endovascular contact aspiration vs stent retriever on revascularization in patients with acute ischemic stroke and large vessel occlusion: the ASTER randomized clinical trial. *JAMA* 2017;318:443–52.
- 2 Turk AS, Siddiqui A, Fifi JT, et al. Aspiration thrombectomy versus stent retriever thrombectomy as first-line approach for large vessel occlusion (COMPASS): a multicentre, randomised, open label, blinded outcome, non-inferiority trial. *Lancet* 2019;393:998–1008.
- 3 Zaidat OO, Castonguay AC, Linfante I, et al. First pass effect: a new measure for stroke thrombectomy devices. *Stroke* 2018;49:660–6.
- 4 Kang D-H, Kim JW, Kim BM, et al. Need for rescue treatment and its implication: stent retriever versus contact aspiration thrombectomy. *J Neurointerv Surg* 2019;11:979–83.
- 5 Spiotta AM, Chaudry MI, Hui FK, et al. Evolution of thrombectomy approaches and devices for acute stroke: a technical review. *J Neurointerv Surg* 2015;7:2–7.
- 6 Anadani M, Alawieh A, Vargas J, et al. First attempt recanalization with ADAPT: rate, predictors, and outcome. *J Neurointerv Surg* 2019;11:641–5.
- 7 Caroff J, King RM, Arslanian R, et al. Microcatheter navigation through the clot: does size matter? *J Neurointerv Surg* 2019;11:271–4.
- 8 Arslanian R, Caroff J, Marosfoi M. Is bigger really better for clot ingestion during a direct aspiration first pass technique? *J Neurointerv Surg* 2018;10:A43–4.
- 9 Froehler MT. Comparison of vacuum pressures and forces generated by different catheters and pumps for aspiration thrombectomy in acute ischemic stroke. *Interv Neurol* 2017;6:199–206.
- 10 Fitzgerald S, Ryan D, Thornton J, et al. Preclinical evaluation of millipede 088 intracranial aspiration catheter in cadaver and in vitro thrombectomy models. *J Neurointerv Surg* 2021;13:447–52.
- 11 Vuillier F, Medeiros E, Moulin T, et al. Main anatomical features of the M1 segment of the middle cerebral artery: a 3D time-of-flight magnetic resonance angiography at 3 T study. *Surg Radiol Anat* 2008;30:509–14.
- 12 Rai AT, Hogg JP, Cline B, et al. Cerebrovascular geometry in the anterior circulation: an analysis of diameter, length and the vessel taper. *J Neurointerv Surg* 2013;5:371–5.
- 13 Nogueira RG, Ryan D, Mullins L, et al. Maximizing the catheter-to-vessel size optimizes distal flow control resulting in improved revascularization in vitro for aspiration thrombectomy. *J Neurointerv Surg* 2021;13:neurintsurg-2021-017316.
- 14 Tsang COA, Cheung IHW, Lau KK, et al. Outcomes of stent retriever versus aspiration-first thrombectomy in ischemic stroke: a systematic review and meta-analysis. *AJNR Am J Neuroradiol* 2018;39:2070–6.
- 15 Gershon BS, Bageac DV, Shigematsu T, et al. First clinical report of aspiration through a novel 0.088-inch catheter positioned in the M1 middle cerebral artery for ELVO thrombectomy. *BMJ Case Rep* 2020;13:e016780.
- 16 Nogueira RG, Mohammaden MH, Al-Bayati AR, et al. Preliminary experience with 088 large bore intracranial catheters during stroke thrombectomy. *Interv Neuroradiol* 2021;27:427–33.
- 17 Torabi R, Mokin M, Ren Z. First U.S. experience with the R4Q distal access catheter for contact aspiration mechanical thrombectomy in emergent large vessel occlusion acute ischemic stroke. *J Neurointerv Surg* 2020;12:A66–7.



| Table S1: Patient details

Age	N=34
Mean ± SD (median)	69.8 ± 11.5 (70.0)
Range: min, max	47, 93
Gender	% (N/N)
Male	51.1% (23/45)
Female	48.9% (22/45)
Time since last known well (hours)	N=42
Mean ± SD (median)	5.5 ± 3.3 (4)
Range: min, max	1.7, 15.9
Baseline NIH Stroke Scale Score	N=45
Mean ± SD (median)	16.2 ± 6.2 (16)
Range: min, max	7.0, 28.0
Pre-Stroke Modified Rankin Score (mRS)	% (N/N)
mRS 0	77.8% (35/45)
mRS 1	15.6% (7/45)
mRS 2	6.7% (3/45)
Site of Occlusion (Core Lab)	% (N/N)
Middle Cerebral Artery (MCA)	
M1	60.0% (27/45)
M2	13.3% (6/45)
Internal Carotid Artery (ICA)	26.7% (12/45)
Pre-Procedure Intravenous Lytic Administration	% (N/N)
Administered	42.2% (19/45)
Not Administered	57.8% (26/45)
Type of Anesthesia	% (N/N)
General	95.6% (43/45)
Conscious Sedation	4.4% (2/45)

ICMJE DISCLOSURE FORM

Date:	2/10/2021
Your Name:	Andrew Holden
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="text-align: right; font-size: small; margin-top: -10px;">Click the tab key to add additional rows.</div>	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div>	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input checked="" type="checkbox"/> None	
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input type="checkbox"/> None	
		Medtronic	Medical Advisory Board
		Boston Scientific	Medical Advisory Board
		Gore	Medical Advisory Board
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

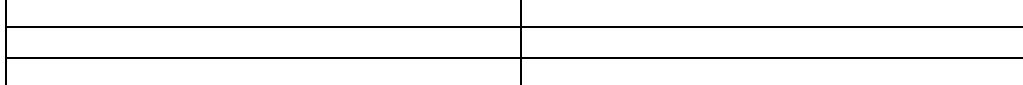
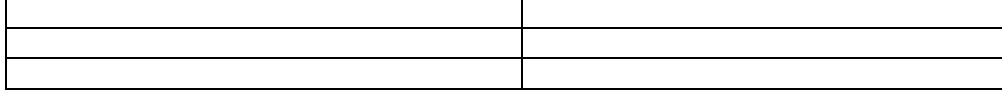
Date:	9/30/2021
Your Name:	Andrew Laing
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None 	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None 	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input type="checkbox"/> None	
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input type="checkbox"/> None	
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date:	9/27/2021
Your Name:	Ben McGuinness
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
Time frame: Since the initial planning of the work									
1 All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input type="checkbox"/> None <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 50%;">Route 92</td> <td style="width: 50%;">See note from corresponding author regarding Route 92 funding of devices and research team at Hospital for this trial</td> </tr> <tr> <td colspan="2">Click the tab key to add additional rows.</td> </tr> </table>			Route 92	See note from corresponding author regarding Route 92 funding of devices and research team at Hospital for this trial	Click the tab key to add additional rows.			
Route 92	See note from corresponding author regarding Route 92 funding of devices and research team at Hospital for this trial								
Click the tab key to add additional rows.									
Time frame: past 36 months									
2 Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 50%; height: 40px;"></td> <td style="width: 50%; height: 40px;"></td> </tr> <tr> <td style="width: 50%; height: 40px;"></td> <td style="width: 50%; height: 40px;"></td> </tr> <tr> <td style="width: 50%; height: 40px;"></td> <td style="width: 50%; height: 40px;"></td> </tr> </table>								

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input type="checkbox"/> None	
		Route 92 Medical	I have received consultancy fees for advice provided to the company
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	
10	Leadership or fiduciary role in	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	other board, society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date:	9/26/2021
Your Name:	James Caldwell
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input type="checkbox"/> None Route 92 Medical sponsor this study providing all the devices required and providing funding to the The Vascular Interventional Radiology Unit (VIRU) and Neurology research team at Auckland City Hospital. The study investigators are not remunerated for their involvement in the study or for work on this manuscript.	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None Click the tab key to add additional rows.	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)								
3	Royalties or licenses	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
4	Consulting fees	<input type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>I have a consulting agreement with Route 92 Medical who make the aspiration system used in this study.</td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>	I have a consulting agreement with Route 92 Medical who make the aspiration system used in this study.							
I have a consulting agreement with Route 92 Medical who make the aspiration system used in this study.											
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Lecturer fees paid by Medtronic in 2019.</td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>	Lecturer fees paid by Medtronic in 2019.							
Lecturer fees paid by Medtronic in 2019.											
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
10	Leadership or fiduciary role in other board, society, committee or advocacy group, paid or unpaid	<input checked="" type="checkbox"/> None	
11	Stock or stock options	<input checked="" type="checkbox"/> None	
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None	
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None	
<p>Please place an "X" next to the following statement to indicate your agreement:</p> <p><input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.</p>			

ICMJE DISCLOSURE FORM

Date:	9/30/2021
Your Name:	Martin Krauss
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="text-align: right; font-size: small; margin-top: -10px;">Click the tab key to add additional rows.</div>	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div>	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input checked="" type="checkbox"/> None	
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date: 27 September 2021

Your Name: Peter Alan Barber

Manuscript Title: Aspiration thrombectomy using a novel 11:31:31 AM88 catheter and specialized delivery catheter

Manuscript Number (if known): Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
Time frame: Since the initial planning of the work									
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 50%; height: 40px;"></td><td style="width: 50%; height: 40px;"></td></tr> <tr><td style="height: 40px;"></td><td style="height: 40px;"></td></tr> <tr><td style="height: 40px;"></td><td style="height: 40px; text-align: center;">Click the tab key to add additional rows.</td></tr> </table>						Click the tab key to add additional rows.
	Click the tab key to add additional rows.								
Time frame: past 36 months									
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 50%; height: 40px;"></td><td style="width: 50%; height: 40px;"></td></tr> <tr><td style="height: 40px;"></td><td style="height: 40px;"></td></tr> <tr><td style="height: 40px;"></td><td style="height: 40px;"></td></tr> </table>						

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)								
3	Royalties or licenses	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
4	Consulting fees	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
10	Leadership or fiduciary role in other board,	<input type="checkbox"/> None	<table border="1"><tr><td>Council of the Australia and New Zealand</td><td></td></tr></table>	Council of the Australia and New Zealand							
Council of the Australia and New Zealand											

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
	society, committee or advocacy group, paid or unpaid	Association of Neurologists <hr/> <hr/>	
11	Stock or stock options	<input checked="" type="checkbox"/> None <hr/> <hr/> <hr/>	
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input type="checkbox"/> None <hr/> <hr/> <hr/>	
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <hr/> <hr/> <hr/>	
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.			

ICMJE DISCLOSURE FORM

Date:	10/5/2021
Your Name:	Stefan Brew
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="text-align: right; font-size: small; margin-top: -10px;">Click the tab key to add additional rows.</div>	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div>	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input type="checkbox"/> None	
		Route 92 Medical	Consultancy fees
		Microvention	Consultancy fees
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date:	8/28/2021
Your Name:	Shane Sang Hyun Lee
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
Time frame: Since the initial planning of the work									
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input type="checkbox"/> None <i>Route 92</i>	<i>See note from corresponding author regarding route 92 funding of device and research team for this trial.</i>						
Time frame: past 36 months									
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; height: 50px;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>						

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)								
3	Royalties or licenses	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
4	Consulting fees	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
7	Support for attending meetings and/or travel	<input type="checkbox"/> None	<p><i>Stylor Culpan medical Medtronic</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td><i>Fellow course travel + accommodation</i></td><td><i>Fellow course travel + accommodation</i></td></tr> <tr><td><i>Conference travel + accommodation</i></td><td></td></tr> </table>	<i>Fellow course travel + accommodation</i>	<i>Fellow course travel + accommodation</i>	<i>Conference travel + accommodation</i>					
<i>Fellow course travel + accommodation</i>	<i>Fellow course travel + accommodation</i>										
<i>Conference travel + accommodation</i>											
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>						
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>						
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>						
Please place an "X" next to the following statement to indicate your agreement:									
<input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date:	9/26/2021
Your Name:	Steven W. Hetts, MD
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
Time frame: Since the initial planning of the work									
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input type="checkbox"/> None <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 50%;">Clinical Events Monitor for SUMMIT-NZ</td> <td style="width: 50%;">Contract between Route 92 and UCSF</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td colspan="2" style="text-align: right; padding-right: 10px;">Click the tab key to add additional rows.</td> </tr> </table>		Clinical Events Monitor for SUMMIT-NZ	Contract between Route 92 and UCSF			Click the tab key to add additional rows.	
Clinical Events Monitor for SUMMIT-NZ	Contract between Route 92 and UCSF								
Click the tab key to add additional rows.									
Time frame: past 36 months									
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input type="checkbox"/> None <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 50%;">Stryker</td> <td style="width: 50%;">Core lab services contracts with UCSF</td> </tr> <tr> <td>Siemens</td> <td>Research grants to UCSF</td> </tr> <tr> <td>NIH</td> <td>Research grants to UCSF</td> </tr> </table>		Stryker	Core lab services contracts with UCSF	Siemens	Research grants to UCSF	NIH	Research grants to UCSF
Stryker	Core lab services contracts with UCSF								
Siemens	Research grants to UCSF								
NIH	Research grants to UCSF								

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
3	Royalties or licenses	<input checked="" type="checkbox"/> None	[Empty table row]						
4	Consulting fees	<input type="checkbox"/> None	[Empty table row]						
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	[Empty table row]						
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	[Empty table row]						
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	[Empty table row]						
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	[Empty table row]						
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input type="checkbox"/> None	<table border="1"> <tr> <td>Imperative Care – Chair of DSMB</td> <td>Consulting fees to me</td> </tr> <tr> <td>Microvention – DMC member</td> <td>Consulting fees to me</td> </tr> <tr> <td>Johnson and Johnson – CEC member</td> <td>Consulting fees to me</td> </tr> </table>	Imperative Care – Chair of DSMB	Consulting fees to me	Microvention – DMC member	Consulting fees to me	Johnson and Johnson – CEC member	Consulting fees to me
Imperative Care – Chair of DSMB	Consulting fees to me								
Microvention – DMC member	Consulting fees to me								
Johnson and Johnson – CEC member	Consulting fees to me								
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	[Empty table row]						

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>							
11	Stock or stock options	<input type="checkbox"/> None <table border="1"> <tr><td>Filtro, Inc</td><td>Equity</td></tr> <tr><td>ThrombX, Inc</td><td>Equity</td></tr> <tr><td></td><td></td></tr> </table>		Filtro, Inc	Equity	ThrombX, Inc	Equity		
Filtro, Inc	Equity								
ThrombX, Inc	Equity								
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>							
<p>Please place an "X" next to the following statement to indicate your agreement:</p> <p><input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.</p>									

ICMJE DISCLOSURE FORM

Date:	9/27/2021
Your Name:	Teddy Y Wu
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="text-align: right; font-size: small; margin-top: -10px;">Click the tab key to add additional rows.</div>	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div>	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input checked="" type="checkbox"/> None	
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date:	9/29/2021
Your Name:	Wayne Collecutt
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="text-align: right; font-size: small; margin-top: -10px;">Click the tab key to add additional rows.</div>	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div>	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input checked="" type="checkbox"/> None	
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date: 9/26/2021

Your Name: David S Liebeskind, MD

Manuscript Title: Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter

Manuscript Number (if known): Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

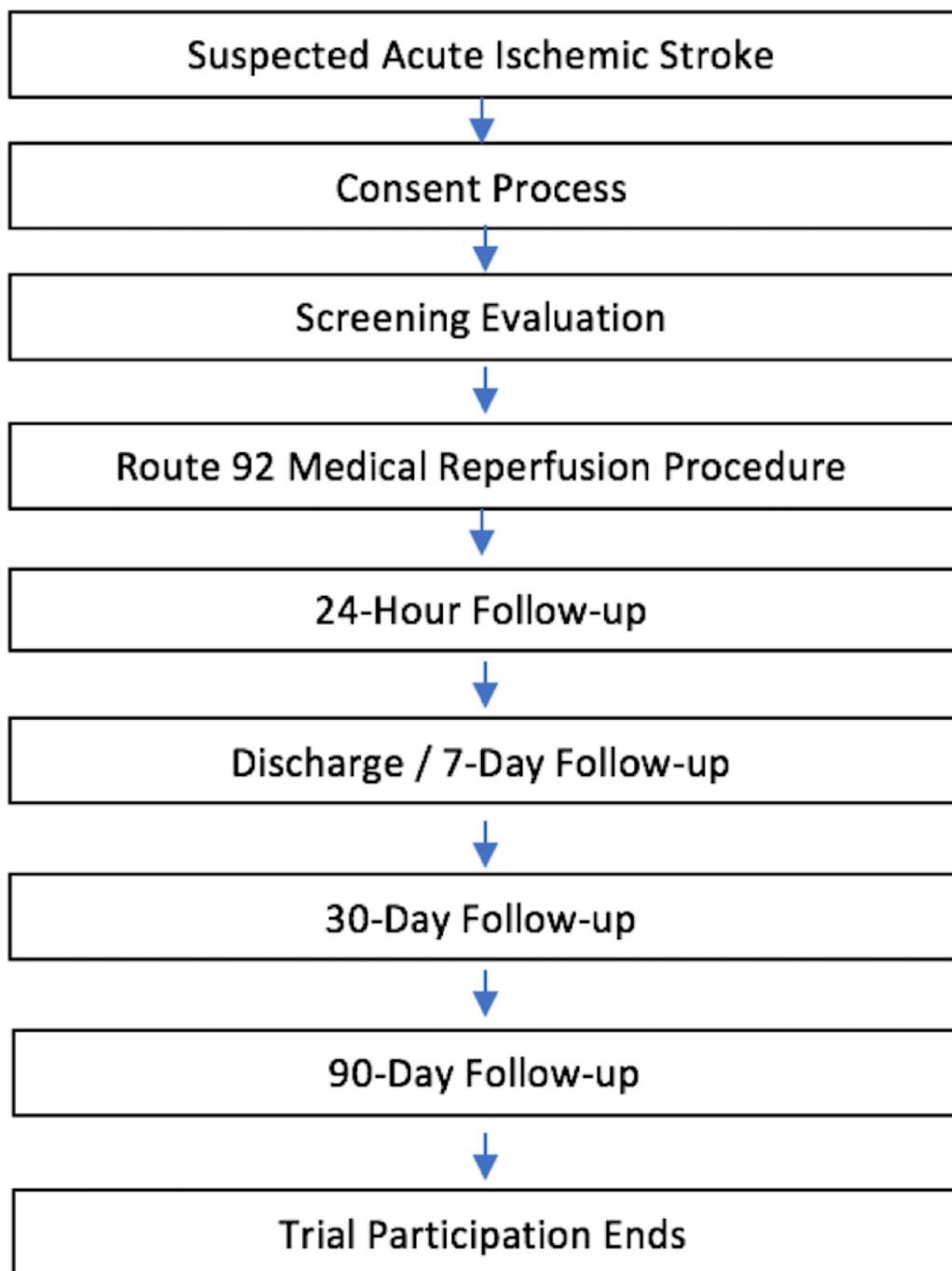
The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)												
Time frame: Since the initial planning of the work															
1	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 10px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 10px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 10px;"></div> <div style="text-align: right; font-size: small; margin-top: -10px;">Click the tab key to add additional rows.</div>														
Time frame: past 36 months															
2	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 150px; margin-top: 10px; vertical-align: top;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 50%;">Genentech</td><td style="width: 50%;">Imaging Core Lab</td></tr> <tr><td>J & J Services</td><td></td></tr> <tr><td>Medtronic/Covidien</td><td></td></tr> <tr><td>Neurovasc Technologies</td><td></td></tr> <tr><td>Rapid Medical</td><td></td></tr> <tr><td>Route 92 Medical</td><td></td></tr> </table> </div>	Genentech	Imaging Core Lab	J & J Services		Medtronic/Covidien		Neurovasc Technologies		Rapid Medical		Route 92 Medical			
Genentech	Imaging Core Lab														
J & J Services															
Medtronic/Covidien															
Neurovasc Technologies															
Rapid Medical															
Route 92 Medical															

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
		Siemens Stryker	
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input type="checkbox"/> None Perfuse, Inc. Abbvie Astra Zeneca UK Zoll	
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	
10	Leadership or fiduciary role in other board, society, committee or advocacy group, paid or unpaid	<input checked="" type="checkbox"/> None	
11	Stock or stock options	<input checked="" type="checkbox"/> None	
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None	
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None	
<p>Please place an "X" next to the following statement to indicate your agreement:</p> <p><input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.</p>			



| Table S1: Patient details

Age	N=34
Mean ± SD (median)	69.8 ± 11.5 (70.0)
Range: min, max	47, 93
Gender	% (N/N)
Male	51.1% (23/45)
Female	48.9% (22/45)
Time since last known well (hours)	N=42
Mean ± SD (median)	5.5 ± 3.3 (4)
Range: min, max	1.7, 15.9
Baseline NIH Stroke Scale Score	N=45
Mean ± SD (median)	16.2 ± 6.2 (16)
Range: min, max	7.0, 28.0
Pre-Stroke Modified Rankin Score (mRS)	% (N/N)
mRS 0	77.8% (35/45)
mRS 1	15.6% (7/45)
mRS 2	6.7% (3/45)
Site of Occlusion (Core Lab)	% (N/N)
Middle Cerebral Artery (MCA)	
M1	60.0% (27/45)
M2	13.3% (6/45)
Internal Carotid Artery (ICA)	26.7% (12/45)
Pre-Procedure Intravenous Lytic Administration	% (N/N)
Administered	42.2% (19/45)
Not Administered	57.8% (26/45)
Type of Anesthesia	% (N/N)
General	95.6% (43/45)
Conscious Sedation	4.4% (2/45)

ICMJE DISCLOSURE FORM

Date:	2/10/2021
Your Name:	Andrew Holden
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="text-align: right; font-size: small; margin-top: -10px;">Click the tab key to add additional rows.</div>	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div>	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input checked="" type="checkbox"/> None	
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input type="checkbox"/> None	
		Medtronic	Medical Advisory Board
		Boston Scientific	Medical Advisory Board
		Gore	Medical Advisory Board
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

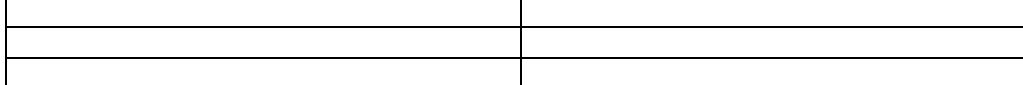
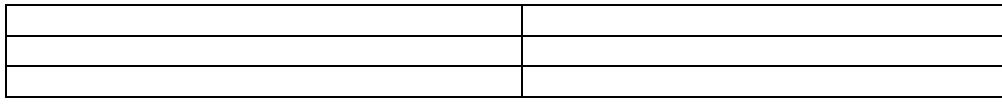
Date:	9/30/2021
Your Name:	Andrew Laing
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None 	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None 	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input type="checkbox"/> None	
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input type="checkbox"/> None	
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date:	9/27/2021
Your Name:	Ben McGuinness
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
Time frame: Since the initial planning of the work									
1 All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input type="checkbox"/> None <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 50%;">Route 92</td> <td style="width: 50%;">See note from corresponding author regarding Route 92 funding of devices and research team at Hospital for this trial</td> </tr> <tr> <td colspan="2">Click the tab key to add additional rows.</td> </tr> </table>			Route 92	See note from corresponding author regarding Route 92 funding of devices and research team at Hospital for this trial	Click the tab key to add additional rows.			
Route 92	See note from corresponding author regarding Route 92 funding of devices and research team at Hospital for this trial								
Click the tab key to add additional rows.									
Time frame: past 36 months									
2 Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 50%; height: 40px;"></td> <td style="width: 50%; height: 40px;"></td> </tr> <tr> <td style="width: 50%; height: 40px;"></td> <td style="width: 50%; height: 40px;"></td> </tr> <tr> <td style="width: 50%; height: 40px;"></td> <td style="width: 50%; height: 40px;"></td> </tr> </table>								

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input type="checkbox"/> None	
		Route 92 Medical	I have received consultancy fees for advice provided to the company
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	
10	Leadership or fiduciary role in	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	other board, society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date:	9/26/2021
Your Name:	James Caldwell
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input type="checkbox"/> None <small>Route 92 Medical sponsor this study providing all the devices required and providing funding to the The Vascular Interventional Radiology Unit (VIRU) and Neurology research team at Auckland City Hospital. The study investigators are not remunerated for their involvement in the study or for work on this manuscript.</small>	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None	
<small>Click the tab key to add additional rows.</small>			

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)								
3	Royalties or licenses	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
4	Consulting fees	<input type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>I have a consulting agreement with Route 92 Medical who make the aspiration system used in this study.</td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>	I have a consulting agreement with Route 92 Medical who make the aspiration system used in this study.							
I have a consulting agreement with Route 92 Medical who make the aspiration system used in this study.											
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Lecturer fees paid by Medtronic in 2019.</td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>	Lecturer fees paid by Medtronic in 2019.							
Lecturer fees paid by Medtronic in 2019.											
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
10	Leadership or fiduciary role in other board, society, committee or advocacy group, paid or unpaid	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date:	9/30/2021
Your Name:	Martin Krauss
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="text-align: right; font-size: small; margin-top: -10px;">Click the tab key to add additional rows.</div>	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div>	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input checked="" type="checkbox"/> None	
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date: 27 September 2021

Your Name: Peter Alan Barber

Manuscript Title: Aspiration thrombectomy using a novel 11:31:31 AM88 catheter and specialized delivery catheter

Manuscript Number (if known): Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid black; height: 40px; margin-top: 5px; text-align: right;">Click the tab key to add additional rows.</div>	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div>	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)								
3	Royalties or licenses	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
4	Consulting fees	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
10	Leadership or fiduciary role in other board,	<input type="checkbox"/> None	<table border="1"><tr><td>Council of the Australia and New Zealand</td><td></td></tr></table>	Council of the Australia and New Zealand							
Council of the Australia and New Zealand											

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
	society, committee or advocacy group, paid or unpaid	Association of Neurologists <hr/> <hr/>	
11	Stock or stock options	<input checked="" type="checkbox"/> None <hr/> <hr/> <hr/>	
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input type="checkbox"/> None <hr/> <hr/> <hr/>	
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <hr/> <hr/> <hr/>	
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.			

ICMJE DISCLOSURE FORM

Date:	10/5/2021
Your Name:	Stefan Brew
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="text-align: right; font-size: small; margin-top: -10px;">Click the tab key to add additional rows.</div>	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div>	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input type="checkbox"/> None	
		Route 92 Medical	Consultancy fees
		Microvention	Consultancy fees
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date:	8/28/2021
Your Name:	Shane Sang Hyun Lee
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
Time frame: Since the initial planning of the work									
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input type="checkbox"/> None <i>Route 92</i>	<i>See note from corresponding author regarding route 92 funding of device and research team for this trial.</i>						
Time frame: past 36 months									
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; height: 50px;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>						

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)								
3	Royalties or licenses	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
4	Consulting fees	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
7	Support for attending meetings and/or travel	<input type="checkbox"/> None	<p><i>Stylor Culpan medical Medtronic</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="vertical-align: top;"><i>Fellow course travel + accommodation</i></td><td style="vertical-align: top;"><i>Fellow course travel + accommodation</i></td></tr> <tr><td style="vertical-align: top;"><i>Conference travel + accommodation</i></td><td></td></tr> </table>	<i>Fellow course travel + accommodation</i>	<i>Fellow course travel + accommodation</i>	<i>Conference travel + accommodation</i>					
<i>Fellow course travel + accommodation</i>	<i>Fellow course travel + accommodation</i>										
<i>Conference travel + accommodation</i>											
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>								

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>						
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>						
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>						
Please place an "X" next to the following statement to indicate your agreement:									
<input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date:	9/26/2021
Your Name:	Steven W. Hetts, MD
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
Time frame: Since the initial planning of the work									
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input type="checkbox"/> None <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 50%;">Clinical Events Monitor for SUMMIT-NZ</td> <td style="width: 50%;">Contract between Route 92 and UCSF</td> </tr> <tr> <td colspan="2">Click the tab key to add additional rows.</td> </tr> </table>		Clinical Events Monitor for SUMMIT-NZ	Contract between Route 92 and UCSF	Click the tab key to add additional rows.			
Clinical Events Monitor for SUMMIT-NZ	Contract between Route 92 and UCSF								
Click the tab key to add additional rows.									
Time frame: past 36 months									
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input type="checkbox"/> None <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 50%;">Stryker</td> <td style="width: 50%;">Core lab services contracts with UCSF</td> </tr> <tr> <td>Siemens</td> <td>Research grants to UCSF</td> </tr> <tr> <td>NIH</td> <td>Research grants to UCSF</td> </tr> </table>		Stryker	Core lab services contracts with UCSF	Siemens	Research grants to UCSF	NIH	Research grants to UCSF
Stryker	Core lab services contracts with UCSF								
Siemens	Research grants to UCSF								
NIH	Research grants to UCSF								

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
3	Royalties or licenses	<input checked="" type="checkbox"/> None	[Empty table row]						
4	Consulting fees	<input type="checkbox"/> None	[Empty table row]						
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	[Empty table row]						
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	[Empty table row]						
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	[Empty table row]						
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	[Empty table row]						
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input type="checkbox"/> None	<table border="1"> <tr> <td>Imperative Care – Chair of DSMB</td> <td>Consulting fees to me</td> </tr> <tr> <td>Microvention – DMC member</td> <td>Consulting fees to me</td> </tr> <tr> <td>Johnson and Johnson – CEC member</td> <td>Consulting fees to me</td> </tr> </table>	Imperative Care – Chair of DSMB	Consulting fees to me	Microvention – DMC member	Consulting fees to me	Johnson and Johnson – CEC member	Consulting fees to me
Imperative Care – Chair of DSMB	Consulting fees to me								
Microvention – DMC member	Consulting fees to me								
Johnson and Johnson – CEC member	Consulting fees to me								
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	[Empty table row]						

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>							
11	Stock or stock options	<input type="checkbox"/> None <table border="1"> <tr><td>Filtro, Inc</td><td>Equity</td></tr> <tr><td>ThrombX, Inc</td><td>Equity</td></tr> <tr><td></td><td></td></tr> </table>		Filtro, Inc	Equity	ThrombX, Inc	Equity		
Filtro, Inc	Equity								
ThrombX, Inc	Equity								
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>							
<p>Please place an "X" next to the following statement to indicate your agreement:</p> <p><input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.</p>									

ICMJE DISCLOSURE FORM

Date:	9/27/2021
Your Name:	Teddy Y Wu
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="text-align: right; font-size: small;">Click the tab key to add additional rows.</div>	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"></div>	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input checked="" type="checkbox"/> None	
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date:	9/29/2021
Your Name:	Wayne Collecutt
Manuscript Title:	Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter
Manuscript Number (if known):	Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
Time frame: Since the initial planning of the work			
1	All support for the present manuscript (e.g., funding, provision of study materials, medical writing, article processing charges, etc.) No time limit for this item.	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="text-align: right; font-size: small; margin-top: -10px;">Click the tab key to add additional rows.</div>	
Time frame: past 36 months			
2	Grants or contracts from any entity (if not indicated in item #1 above).	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 5px;"></div>	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input checked="" type="checkbox"/> None	
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	
10	Leadership or fiduciary role in other board,	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)						
	society, committee or advocacy group, paid or unpaid	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
11	Stock or stock options	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>							
Please place an "X" next to the following statement to indicate your agreement: <input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.									

ICMJE DISCLOSURE FORM

Date: 9/26/2021

Your Name: David S Liebeskind, MD

Manuscript Title: Aspiration thrombectomy using a novel 088 catheter and specialized delivery catheter

Manuscript Number (if known): Click or tap here to enter text.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

In the interest of transparency, we ask you to disclose all relationships/activities/interests listed below that are related to the content of your manuscript. "Related" means any relation with for-profit or not-for-profit third parties whose interests may be affected by the content of the manuscript. Disclosure represents a commitment to transparency and does not necessarily indicate a bias. If you are in doubt about whether to list a relationship/activity/interest, it is preferable that you do so.

The author's relationships/activities/interests should be defined broadly. For example, if your manuscript pertains to the epidemiology of hypertension, you should declare all relationships with manufacturers of antihypertensive medication, even if that medication is not mentioned in the manuscript.

In item #1 below, report all support for the work reported in this manuscript without time limit. For all other items, the time frame for disclosure is the past 36 months.

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)												
Time frame: Since the initial planning of the work															
1	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 40px; margin-top: 10px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 10px;"></div> <div style="border: 1px solid #ccc; height: 40px; margin-top: 10px;"></div> <div style="text-align: right; font-size: small; margin-top: -10px;">Click the tab key to add additional rows.</div>														
Time frame: past 36 months															
2	<input checked="" type="checkbox"/> None <div style="border: 1px solid #ccc; height: 150px; margin-top: 10px; vertical-align: top;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 50%;">Genentech</td><td style="width: 50%;">Imaging Core Lab</td></tr> <tr><td>J & J Services</td><td></td></tr> <tr><td>Medtronic/Covidien</td><td></td></tr> <tr><td>Neurovasc Technologies</td><td></td></tr> <tr><td>Rapid Medical</td><td></td></tr> <tr><td>Route 92 Medical</td><td></td></tr> </table> </div>	Genentech	Imaging Core Lab	J & J Services		Medtronic/Covidien		Neurovasc Technologies		Rapid Medical		Route 92 Medical			
Genentech	Imaging Core Lab														
J & J Services															
Medtronic/Covidien															
Neurovasc Technologies															
Rapid Medical															
Route 92 Medical															

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
		Siemens Stryker	
3	Royalties or licenses	<input checked="" type="checkbox"/> None	
4	Consulting fees	<input type="checkbox"/> None Perfuse, Inc. Abbvie Astra Zeneca UK Zoll	
5	Payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events	<input checked="" type="checkbox"/> None	
6	Payment for expert testimony	<input checked="" type="checkbox"/> None	
7	Support for attending meetings and/or travel	<input checked="" type="checkbox"/> None	

		Name all entities with whom you have this relationship or indicate none (add rows as needed)	Specifications/Comments (e.g., if payments were made to you or to your institution)
8	Patents planned, issued or pending	<input checked="" type="checkbox"/> None	
9	Participation on a Data Safety Monitoring Board or Advisory Board	<input checked="" type="checkbox"/> None	
10	Leadership or fiduciary role in other board, society, committee or advocacy group, paid or unpaid	<input checked="" type="checkbox"/> None	
11	Stock or stock options	<input checked="" type="checkbox"/> None	
12	Receipt of equipment, materials, drugs, medical writing, gifts or other services	<input checked="" type="checkbox"/> None	
13	Other financial or non-financial interests	<input checked="" type="checkbox"/> None	
<p>Please place an "X" next to the following statement to indicate your agreement:</p> <p><input checked="" type="checkbox"/> I certify that I have answered every question and have not altered the wording of any of the questions on this form.</p>			