Stock Focus

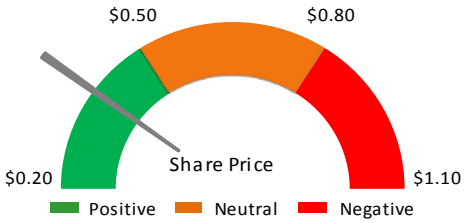
Osprey Medical Inc (OSP)

EVANS & PARTNERS

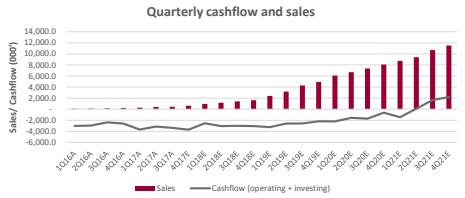
Thursday, 2 November 2017

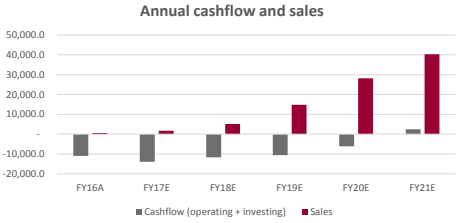
DyeVert from a life of CIN

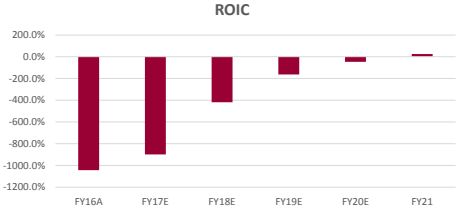
Recommendation: Positive



Trading Data	
Last Price	$0.40
12 month range	$0.34 - $0.50
Market Cap	$136m
Free Float	NA
12 month return (historical)	(5.4)%







OUR THESIS: Osprey Medical manufactures and sells the "*DyeVert Plus*" system which represents an elegant solution addressing a significant risk around the use of dye (contrast media) used in heart catheterization procedures. *DyeVert Plus* significantly reduces the amount of dye used in a procedure thereby reducing the risk of kidney damage, known as Contrast Induced Nephropathy (CIN). Unlike most early stage healthcare companies, Osprey has been significantly de-risked. With an FDA approval under its belt, proof of concept established and a fresh capital raising to fund a step change in sales reps, this will underpin cashflows and ultimately demonstrate the underlying value of the stock. As awareness grows, we expect the device to be incorporated into the continuum of care addressing dye use in at risk patients. Importantly, the American College of Cardiology et al; validated the approach by issuing guidelines recommending hydration and minimising dye dosage as best practice and reinforcing Osprey's value proposition.

FDA Approval: Osprey's FDA approval was received in 2015 which was the first major step in the de-risking of the company. At this time, the trial data statistically supported only three of its four label claims resulting in a sharp selloff in share price. Subsequent sub-group analysis undertaken highlighted some compelling data around dye savings and event reduction in riskier patients. It is this data that is increasingly resonating with surgeons.

Sales Momentum: Osprey have embarked upon an aggressive program to educate hospitals and surgeons. Osprey's sales momentum has generated a notable 6 quarters of consecutive quarterly growth of between 33% and 42%. This looks set to continue as the recent capital raisings will fund a step change in sales rep numbers from 7 in 1Q16 to an expectation of 50 by 4Q19. Recent hurricanes in the US understandably created a temporary hiatus which impacted volumes in 3Q17 but importantly was short lived with affected markets now rebounding strongly.

Valuation 61 cents per share: Given the early stage nature of the device we have adopted what we believe to be a series of conservative assumptions including a cashflow breakeven expectation of 2Q21. We have also discounted the market opportunity relative to management's expectations leaving plenty of valuation upside. Based on our scenario analysis we have a valuation range of 43c -79c.

Earnings Forecasts

Yr to December	**14A**	**15A**	**16A**	**17E**	**18E**	**19E**
REVENUE ($m)	0.0	0.2	0.6	1.8	5.1	14.8
EBITDA ($m)	(9.6)	(12.1)	(11.6)	(14.4)	(12.5)	(11.4)
Adj NPAT ($m)	(9.7)	(12.2)	(11.7)	(14.5)	(12.8)	(11.7)
EPS (¢)	(15.8)	(7.9)	(6.2)	(5.1)	(3.8)	(3.4)
EPS Gth (%)	NM	NM	NM	NM	NM	NM
PER (x)	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**
ROE (%)	**(88%)**	**(104%)**	**(54%)**	**(46%)**	**(67%)**	**(158%)**
EV/EBITDA (x)	**NM**	**NM**	**NM**	**NM**	**NM**	**NM**
Net Debt/EBITDA (x)	0.5	1.0	1.9	2.3	1.7	0.9
Int. Cover (x)						
Valuation (DCF)						**$0.61**

Source: EAP Research

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SECTION 1: INVESTMENT SUMMARY

Osprey Medical is a US based medical device company that addresses a significant risk around the use of dye in heart catheterization procedures. Dye or "contrast media" assists cardiologists visually locate blocked or compromised arteries. Once the blockage is located, the cardiologist can use a catheter or a stent to widen the arteries so as to increase the flow of blood. The kidneys are then responsible for filtering the dye from the bloodstream. Unfortunately, the dye is toxic and when it arrives in the kidneys, it can cause kidney damage or worst case kidney failure, also known as Contrast Induced Nephropathy or CIN. Osprey's flagship product "*DyeVert Plus"* plays a very important part in reducing dye load at the point of administration without any corresponding impact on the surgeon's ability to locate the blockage. The reduction of dye can help mitigate the effect of dye on the kidneys.

Market Opportunity

In recent times, the treatment of blocked arteries pre or post a heart attack is usually performed via a heart catheterisation procedure. Part of the attraction of this approach is the fact that it is non-invasive but perhaps more importantly it has been responsible for a dramatic improvement in cardiovascular outcomes. However, the downside of this procedure is the kidney related effects stemming from the toxicity and viscosity of the dye. Given the volume of heart catheterisation procedures, we have referenced this as one of the primary market opportunities particularly for patients with Chronic Kidney Disease (Stages III- V). We estimate this market segment to be approximately $340m. However, the total US market opportunity we believe to be ~$700m if we include a representation of other high risk patients such as diabetics. We have also included DyeTect, an automated contrast monitoring system which is yet to be launched, as part of our market estimates. Despite the placement of a German Sales Rep recently by Osprey we are currently not recognising Europe in our market opportunity calculations.

Motivated Users

The onset of complications arising from dye use (known as CIN), remains an ominous and costly event that has prompted clinical vigilance as US hospitals focus on reducing re-admission rates. The US Government has ensured the industry focuses on the extraordinary cost stemming from hospital readmissions by implementing the Hospital Readmission Reduction Program (HRRP). This program requires Centers for Medicare & Medicaid Services (CMS) to reduce payments to hospitals with readmission rates over and above a re-admission rate that would be "expected," based on an average hospital with similar patients. These penalties have been grandfathered in and are now proving very costly for hospitals that have triggered the penalties. In those instances, total CMS payments are adjusted down across the board and not just the payments associated with a patient group that exceeded the re-admission rate. Of particular focus under the HRRP is patients re-admitted following heart attack or heart failure. In these patients, Osprey's *DyeVert Plus* represents an important step to help mitigate re-admission rates with a nominal cost. We expect the part DyeVert Plus plays in avoiding/mitigating CMS penalties will help underpin its penetration into a hospital.

Clinical guidelines

The success of DyeVert Plus will also be assisted by the published guidelines for at risk patients undergoing procedures utilising dye. According to the Guidelines of the American College of Cardiology Foundation (ACCF), the American Heart Association (AHA) and the Society for Cardiovascular Angiography and Interventions (SCAI) the preferred protocol for patients with Chronic Kidney Disease, is hydration and minimising dye dosage. Both approaches are to be delivered in concert and neither should be used to replace the other. In addition, the total amount of dye administered to the patient should be monitored in real time and limited where possible. Osprey's DyeVert Plus is well positioned and represents the only device available that allows surgeons to adhere to industry guidelines. Importantly, there is no other option available that carries a higher recommendation by these organisations based on the clinical evidence available to date. As a result, the incentive of surgeons and hospitals to integrate Osprey's device into the continuum of care for at risk patients is compelling.

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A de-risked device company

An important step in the de-risking of Osprey was its FDA approval in 2015. However, trial data statistically supported only three of its four label claims. Subsequent sub-group analysis was undertaken highlighting some impressive data that supports the strong uptake of the device amongst surgeons experienced to date in its test markets. In particular, the sub-group analysis demonstrated dye savings for more complex, cases, in the order of 31-46% vs the 15% indicated on the trial. At the same time, the AVERT system (DyeVert's predecessor) reduced events by 20.5% across all patients in the trial. Importantly, Stage III-V Chronic Kidney Disease patients experienced the most significant reduction in CIN events of 49.5%.

The next step in de-risking the company was establishing the proof of concept. Osprey's two pilot studies were in San Antonio and Atlanta with both demonstrating an impressive mix of acceptance amongst physicians, hospital penetration and repeat ordering. These markets underpinned management's confidence to attempt to replicate these results across the US. Building a direct sales channel was key and Osprey have recently raised capital to fund these efforts. The balance sheet is debt free and we believe has enough capital to fund a material change in sales reps to ensure the company makes it to breakeven and beyond.

Acquisition target

We believe there is no doubt Osprey represents a significant takeover risk. *DyeVert Plus* is a compelling undervalued product in a cash rich company that is clearly showing momentum. Potential suitors have the luxury to watch the momentum unfold before making a move. In other device companies' hands, adding *DyeVert Plus* into a suite of existing cardiac related devices whilst leveraging an existing sales force could generate some handsome synergies. Pricing tension under this scenario will only likely emerge the closer Osprey gets to breakeven.

Valuation

We believe we have adopted an inherently conservative approach to estimating Osprey Medical's market opportunity. This recognises the early stage nature of the device and its rollout. There could ultimately prove to be significant upside to our base case valuation as the penetration of the device into US and European hospitals increases over time. Despite our conservatism (detail below), our 61 cents per share valuation remains compelling with 52.3% upside to its most recent closing price. We highlight the areas where we believe we have been conservative:

- **US Market:** We have forecast the US market for DyeVert Plus as representing a US$480m opportunity. DyeVert Plus caters to niche patient cohorts with Chronic Kidney Disease (Stages III-V) and diabetes representing the largest target market and therefore the lion's share of the valuation.
- **European Market:** We have not included Europe in our earnings forecasts despite the appointment and placement of one German Sales Representative. Osprey currently estimate Europe represents a $520m opportunity. Given the early stage of market development, we have removed it from our valuation.
- **Market penetration:** We are forecasting a market penetration of ~16% in the terminal year in the US.
- **Market growth:** Osprey management are growing the number of coronary procedures requiring contrast dye at 2% per annum. Our forecasts largely keep the market opportunity flat with increasing sales reliant on penetration.
- **DyeTect:** The newest addition to Osprey Medical's product suite is the DyeTect which enables real-time dye threshold monitoring of dye dose. We have adopted a $210m opportunity in our forecasts for this product and similar to DyeVert Plus we have ignored the European opportunity.
- **Tax Losses and franking credits:** We have not included either within our valuation methodology.
- **WACC of 13.2%** used in our valuation: We have employed an aggressive WACC of 13.2% to reflect the ungeared nature of the business. Our beta also reflects a higher than average risk profile of a business not yet breakeven as well as penalising the valuation due to its inherent illiquidity.

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SECTION 2: INDUSTRY BACKGROUND

Osprey Medical is a US based medical device company that addresses a significant risk around the use of dye (or contrast media) in heart catheterization procedures. One of the more common heart catheterisation procedures is a percutaneous coronary intervention (PCI). In this procedure the cardiologist inserts a thin flexible tube, typically via the groin, to treat a narrowing or obstructed artery by utilising a balloon catheter or deploying a stent. Before this can happen, the treating cardiologist injects contrast media into the arteries to visually assist the location of the blockage via X-Ray imaging. The risk around the use of contrast media typically occurs when this iodine based and highly viscous substance is filtered out of the blood stream by the kidneys. When the contrast media enters the kidneys it can trigger, in high risk patients, kidney damage or worst case kidney failure. This is typically referred to as Contrast Induced Nephropathy or CIN. Osprey's DyeVert Plus system is becoming an integral part of these operations for high risk patients as it can essentially reduce the amount of dye by ~40% thereby significantly reducing the chance of CIN. Osprey's DyeVert Plus system is attempting to penetrate the US hospital system to be utitlised as part of the continuum of care protocol for at risk patients.

What is Contrast Induced Nephropathy or CIN ?

CIN is a kidney related injury following the administration of contrast media. It often affects individuals with already compromised kidney function. Contrast Media is responsible for up to a third of hospital acquired acute kidney injuries (AKI). CIN related events can affect 1-2% of the general population and up to 50% of the high-risk subgroups following a coronary intervention requiring the use of contrast media. High risk patients are those represented by a combination of the following conditions: Chronic Kidney Disease (CKD), diabetes, sepsis, as well as patients that are dehydrated, anemic and/or elderly (>70 years old).

Why is CIN such an issue?

More recently, the trend towards percutaneous coronary intervention (PCI) for the treatment of acute myocardial infarction (heart attack) has seen an improvement in cardiovascular outcomes, however it has increased the risk of CIN events due to the use of dye. Minimising the risk of CIN has, therefore, become a focus for hospitals in the absence of alternatives to the use of Contrast Media considering how costly it is to the system. Not only does CIN put the patient at risk, the associated costs to the hospital of CIN events are extraordinarily high. These costs are incurred via an increased length of stay, increased risk of re-admission triggering penalties under the Hospital Readmission Reduction Program (HRRP) and in a worst case scenario the daily cost of dialysis for the patient.

Definition and implication of CIN

There is debate about the exact definition of CIN, however, the generally accepted rule is a 25% relative increase in serum creatinine within 48-72 hours of contrast media exposure. In absolute terms, it is represented by a 0.5mg/dL increase in serum creatinine levels. To date there is lack of consensus supporting a direct correlation between CIN and mortality as well as Major Adverse Cardiac Events (MACE). Nevertheless, the onset of CIN following cardiac procedures remains a costly event that has prompted clinical vigilance and early intervention. Clinically, whilst CIN events can be short lived it can lead to several long term adverse events. Studies have shown that of those patients that do suffer from CIN events, 20% of them experience a persistent deterioration of the renal function post administration of contrast.

The highest risk CIN patients are generally regarded as patients with pre-existing Stage III or greater Chronic Kidney Disease (CKD). CKD is defined as an estimated glomerular filtration rate (eGFR) <60mL/min/1.73m 2 for greater than 3 months. GFR is accepted as the best test to measure kidney function and represents how well the kidneys filter wastes from blood. This definition of Chronic Kidney Disease is an important marker for the screening of patients undergoing a dye related procedure. Patients reporting kidney function according to the above definition are prime candidates for the use of the DyeVert Plus system.

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Contrast Media – a necessary evil

Contrast media (ie dye) refers to iodine based compounds that are opaque to x-rays, meaning that the doctors can see the arteries when x-rayed. These compounds have proven to be toxic to the kidneys which can be exacerbated by the concentration and viscosity of the media used. As discussed, when the dye is processed by the kidneys it can lead to CIN. Lower iodine concentration media has been developed to help mitigate kidney injury but it remains questionable as to whether this has resulted in any improvement in patient outcomes associated with its use. Refer to our SWOT analysis for further details.

Osprey's flagship product called DyeVert Plus reduces the volume of contrast dye at the point of administration. Refer to Appendix 1 for further specifications of the DyeVert Plus including its evolution demonstrated by the previous iterations of the product.

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SECTION 3: VALUATION – IT'S ALL IN THE CASHFLOW

Table 1: DCF Valuation

Source : Company disclosures & EAP estimates

OSP	DCF asumptions
Terminal value growth	3.0%
Cost of Equity	12.2%
Debt/ Debt +Equity	0.0%
Liquidity premium	1.0%
WACC	13.2%
DCF Valuation	**0.61**
Current share price	0.40
Upside/ Downisde	**52.3%**

Chart 1: Cumulative free cash flow (CY17E-CY25E)

Source : Company disclosures & EAP estimates

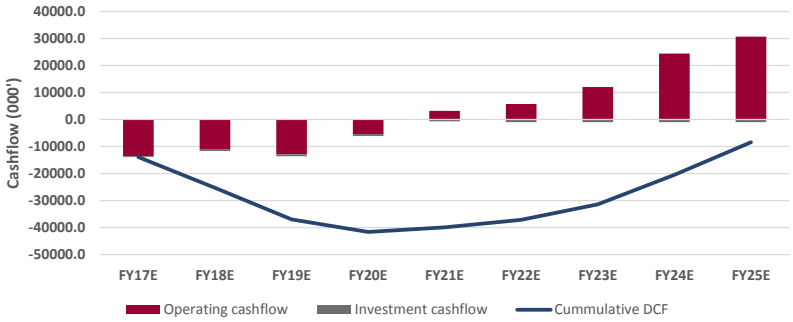

Table 2: Key cash flow assumptions

Source: Company disclosures & EAP estimates

Cashflow assumptions	FY17E	FY18E	FY19E	FY20E	FY21E	Terminal Yr
Sales growth vs pcp	202.9%	190.5%	187.4%	90.5%	43.0%	15.8%
GM%	12.1%	30.0%	43.1%	56.7%	68.9%	75.5%
SG&A as % of rev	703.0%	258.1%	115.2%	68.7%	52.2%	28.5%

We value Osprey at $0.61 based on a DCF valuation methodology with FY25 as the Terminal year. Our forecasts post breakeven (FY22E-FY25E) indicates top line CAGR of +22.4% and market penetration of ~16% (EAP market size) in FY25E. It is worth highlighting that our WACC of 13.2% includes a liquidity penalty of 1% and a weighting of 0% debt/debt+ equity ratio in line with the current capital structure of the company. Arguably, the target capital structure could include debt of 10%-15% once the business is cash flow positive, thereby lowering WACC. On our estimates, 15% debt would lower WACC to 12.1% and an increase in valuation by **+16.4% to $0.71.**

Given the significance of the WACC and terminal year sales growth assumption to valuation, we performed a sensitivity analysis on both variables per Table 3 noting that a -0.5% reduction in terminal growth to 2.5% decreases our valuation by -4.9%. This is relative to a +8.3% movement from a -0.5% decrease to WACC.

Table 3: Terminal Growth & WACC Sensitivity

Source : EAP estimates

DCF	Terminal Growth		
WACC	2.50%	3.00%	3.50%
11.70%	0.71	0.75	0.79
12.10%	0.68	0.71	0.74
13.20%	0.58	0.61	0.63
14.30%	0.51	0.53	0.55

Table 4: WACC sensitivity to Gearing

Source : EAP estimates

Debt/ Debt + Equity	0.0%	15.0%	20.0%
WACC	13.2%	12.1%	11.7%
Valuation	0.61	0.71	0.75

Scenario analysis

We performed a scenario analysis adopting a range of assumptions around penetration, market growth and margins in the periods post breakeven to highlight the spread in valuation between our Bear and Bull cases. Our Bearcase valuation of $0.43 assumes an EBITDA margin of 34% relative to the 38% for our Basecase and 42% for our Bullcase ($0.79 val). We split out our estimates for gross margin (GM%) and selling, general and administrative costs (SG&A%) respectively per Table 6 highlighting that management expect a GM% in the range of 70% to 80% once unit sales reach meaningful scale. Whilst margins are

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clearly material to valuation, in the near term the key catalyst to the share price will be unit sales momentum as evidenced by market growth and hospital penetration.

EAP Sensitivity analysis: Inputs and Output

Table 5: Scenario Analysis Output

Source: EAP estimates

Scenario analysis	Bearcase	Basecase	Bullcase
Valuation	0.43	0.61	0.79
Breakeven	FY22	FY21	FY21
Sales CAGR (FY17E-FY25E)	58.6%	62.5%	64.9%
EBITDA margin (FY25E)	34.4%	38.1%	41.9%
Market penetration (FY25E)	14.0%	16.0%	18.0%

Assumptions underpinning Scenario Analysis

Table 6: Scenario Analysis sales assumptions

Source: EAP estimates

OSP penetration	FY21	FY22	FY23	FY24	FY25
Bearcase	6.5%	7.0%	9.0%	12.0%	14.0%
Basecase	7.8%	9.0%	11.0%	14.0%	16.0%
Bullcase	9.0%	9.5%	13.0%	16.0%	18.0%

Market organic growth	FY21	FY22	FY23	FY24	FY25
Bearcase	0.0%	0.0%	0.0%	0.0%	0.0%
Basecase	0.0%	0.0%	1.0%	1.0%	1.0%
Bullcase	1.5%	1.5%	1.5%	1.5%	1.5%

Table 7: Scenario Analysis margin assumptions

Source: EAP estimates

GM%	FY22	FY23	FY24	FY25
Bearcase	68.0%	71.0%	72.0%	73.0%
Basecase	70.0%	73.0%	74.0%	75.5%
Bullcase	72.0%	75.0%	76.0%	77.0%

SG&A as % of Sales	FY22	FY23	FY24	FY25
Bearcase	50.0%	42.0%	32.0%	30.0%
Basecase	48.0%	40.0%	30.0%	28.5%
Bullcase	46.0%	38.0%	28.0%	26.0%

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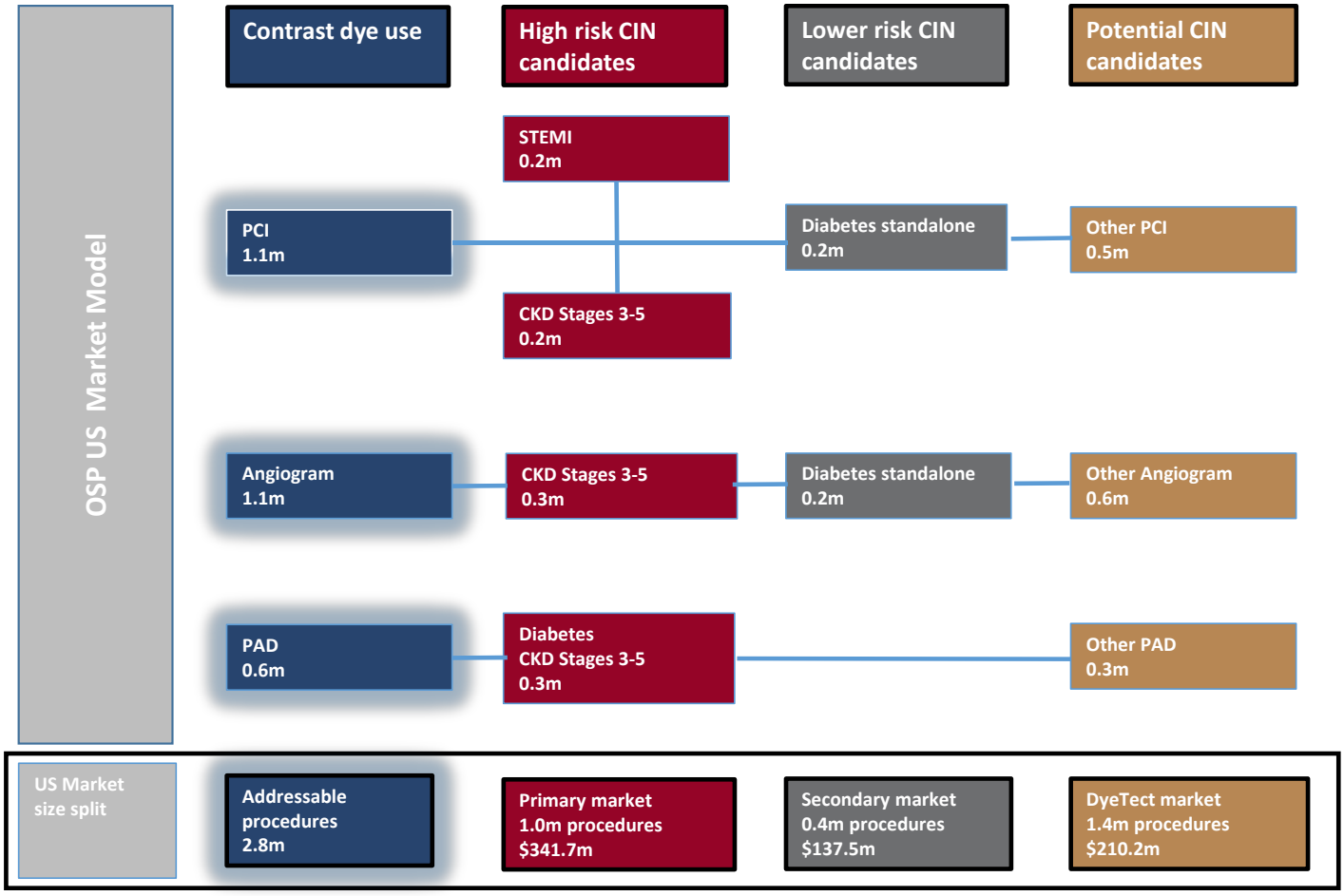
SECTION 4: US MARKET OPPORTUNITY

The market opportunity for Osprey's products is not easily observable. We estimate the primary addressable market in the US for Osprey's flagship product (DyeVert Plus) to be approximately **US$340m** which is largely made up of patients with Stages 3-5 chronic kidney disease (CKD). We then classify a secondary market of patients with standalone diabetes representing a further ~**US$140m** opportunity. Finally, a third market opportunity has only just recently emerged with the launch of DyeTect, an automated contrast monitoring system. We have conservatively set the size of this market at approximately **US$210m** which by the time the company is breakeven will only represent 2.5% of Group sales according to our forecasts. We have excluded Europe from our market opportunity given the proof of concept has only just commenced in that market with the deployment of a German Sales Rep.

In calculating the market opportunity for Osprey's product, we assessed the addressable market by the number of procedures utilising contrast dye. These procedures include coronary angiograms, Percutaneous Coronary Interventions (PCI) and Peripheral Artery Disease (PAD) (see below for details of these procedures). We then assessed the various patient cohorts that were typically at risk of a CIN event while undergoing one of these procedures. As part of the market opportunity the key to penetration revolves around the likelihood of hospitals and or specialists being motivated to employ the use of the device in an effort to reduce the monetary burden of an event and the costs associated with re-admission into the US Hospital system. A groundswell of support has emerged in Osprey's test markets (San Antonio and Atlanta) with management looking to further improve penetration as US hospitals become increasingly responsible for re-admission costs.

Image 1: Osprey US Market size

Source: EAP Research



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We highlight the individual ***contrast dye procedures*** used in determining the market size:

Coronary Angiography
A diagnostic procedure performed to identify whether a patient's coronary arteries are blocked or have narrowed. In order to perform this procedure a catheter is inserted into a patient's artery and then moved up to the coronary artery. The contrast dye is then injected into the artery to allow x-rays to be taken as the dye moves through blood vessels.

PCI/ Angioplasty
PCI is a non-surgical procedure that uses a catheter to place a stent to open up blood vessels in the heart which have been narrowed from a buildup of plaque. Contrast dye is used to allow visibility for the cardiologists when placing the stent.

Image 2: Coronary angiography
Source: John Hopkins Medicine

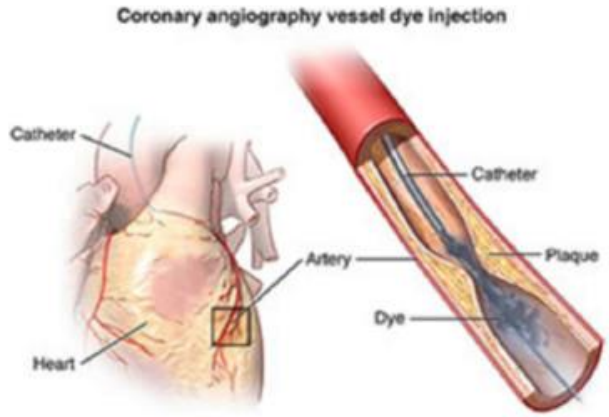
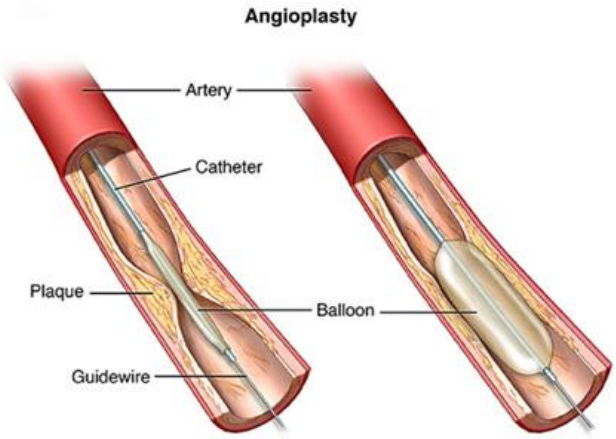


Image 3: PCI/ Angioplasty
Source: John Hopkins Medicine



PAD coronary procedures
Peripheral artery disease (PAD) refers to a narrowing of the arteries in the pelvis or legs and will require the use of contrast dye to perform a PAD screen. It does pertain to other extremities of the body but the procedure requiring the most amount of dye is in the lower leg which we have separately identified when quantifying the market.

Image 4: PAD – Periphery Artery Disease (Lower leg)
Source: CDC

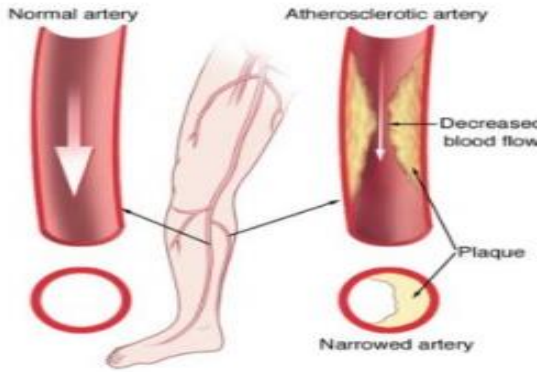


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Table 8: Coronary Osprey Primary market size

Source: Heart & Disease Stroke Statistics & EAP Research

Procedures (m) & Market size ($m)	PCI	Angiograms	Total	Notes
Coronary				
Inpatient Procedures	1.0	1.0	**2.0**	1a
Outpatient Procedures	0.1	0.1	**0.2**	1b
Total procedures	**1.1**	**1.1**	**2.2**	
% STEMI	*20.0%*			1c
STEMI procedures	**0.2**		**0.2**	
Procedures ex STEMI	0.8	1.1	**2.0**	
% CKD Stage 3 to 5	*25.0%*	*25.0%*	*25.0%*	1d
CKD Stage 3 to 5 procedures	**0.2**	**0.3**	**0.5**	
Primary Coronary market size	**0.4**	**0.3**	**0.7**	
DyeVert Plus ASP	350	350	350	1e
Primary Coronary market size ($m)	**147.1**	**90.0**	**237.1**	

**Numbers may not add across due to rounding*

Table 9: PAD Primary market size as of 2014

Source: EAP Research

Procedures (m) & Market size ($m)	PAD	Notes
Total procedures	0.6	2a
% Lower Leg	*50.00%*	
Primary PAD market size	**0.3**	
DyeVert Plus ASP	350	
Primary PAD market size ($m)	**104.6**	

Our estimate for Osprey's *primary* market size of $341.7m consists of $237.1m in coronary procedures and $104.6 for PAD procedures. We have taken a more conservative stance on market size than Osprey management but ultimately there is a robust market opportunity for Osprey's product range. We discuss the individual components of the market in the notes below, the numbering corresponds with Table 8, above.

Coronary OSP market size (Notes Reference Table 8, above)

1a. Procedures

The American Heart Association (AHA) in conjunction with the Centers for Disease Control and Prevention (CDC) present the most up to date statistics annually with regard to heart and stroke statistics. Whilst an annual publication, we understand not all data is refreshed with similar frequency. The most recent statistic from this source relating to total inpatient PCI and Angiogram procedures was in 2010. We assume no growth across 2010 to the current period for both procedures. However, Management (not unreasonably) have assumed a 2% growth rate since 2010 when calculating its version of total market size.

1b. Outpatient estimate

We understand the majority of Angiograms and PCI procedures result in an overnight stay for the patient vs outpatient treatment. The AHA data referenced above relates to inpatient coronary procedures and does not account for outpatient volume. A study performed by Epstein et al (2008) indicates ~6% to 18% of PCI procedures were performed on outpatients. To be conservative, we assume the lower end of the range at 10% of inpatient volumes in order to gross up Osprey's addressable market size.

1c. STEMI

ST- Elevation Myocardial Infarction (STEMI) is a serious heart attack during which one of the heart's major arteries is blocked. With reference to published clinical studies, we understand ~20% of PCI procedures are performed following the onset of STEMI (Chan et al 2011). As such, we estimate 20% of PCI procedures relate to STEMI patients.

A number of studies have indicated a marked increase in the likelihood of patients developing CIN following a STEMI event. For example, Chong et al (2010) highlighted that CIN occurred in 12% of its patient population of STEMI vs 4.5% undergoing PCI. A potential drawback in adoption of DyeVert Plus for STEMI patients is the limited timeframe involved between the onset of STEMI and the PCI procedure (Door to Balloon time). However, we expect hydration therapies (complementary

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therapy to DyeVert Plus in CIN management), would be more difficult to implement in a STEMI event which could elevate the necessity for DyeVert Plus.

1d. Chronic Kidney Disease Stage 3 to 5 patients

Patients with Chronic Kidney Disease (CKD) Stages 3-5 have the highest risk of developing a CIN event. The risk of CIN from this patient population according to the National Kidney Foundation is 30% to 40% higher vs patients with normal renal function.

We reviewed published literature to ascertain the split of patients undergoing Angiograms and PCI procedures that were also CKD Stage 3-5 patients. Based on our review, we understand this split to be 24% to 30% and have adopted 25% as our estimate, resulting in a total size of 0.5m patients p.a across both PCI and STEMI.

Consequently, this sub-segment of patients undergoing Angiograms and PCI procedures is a key market segment for Osprey. Across all three procedures angiograms, PCI and PAD the number of patients with CKD (stages 3-5) represents the bulk of the market opportunity at 60%.

1e. ASP

Average Sales Price (ASP) for DyeVert Plus has remained steady at ~$350 post launch. We expect this price point to be maintained going forward as the addressable market remains fairly underpenetrated.

PAD market size (Notes Reference Table 9, above)

2a. Procedures

We understand there are 0.6m procedures p.a in the US for PAD procedures with ~50% of these relating to procedures below the knee (lower leg). Lower leg procedures represent Osprey's addressable market as these procedures typically require the use of more contrast dye vs above the knee procedures.

It is therefore necessary to include the risks of PAD patients developing CIN when contemplating the market opportunity. The primary risk factor for PAD is diabetes and we highlight that there is a strong overlap of patients with diabetes who are also CKD patients. With reference to data reviewed from the United States Renal Data System (USRDS), diabetic patients represented ~34% of total CKD patients as of 2014. With CKD a primary risk factor for CIN, we assume patients undergoing lower limb PAD scans to be at risk CIN candidates as well.

OSP Secondary Market: 0.4m procedures, $137.5m (Refer to Table 10, below)

Table 10: Osprey Secondary Market size

Source: Heart & Disease Stroke Statistics & EAP Research

Procedures (m) & Market size ($m)	PCI	Angiograms	Total	Notes
Procedures	1.1	1.1	2.2	3a
% Diabetes standalone	18.00%	18.00%	18.00%	
Diabetes standalone procedures	**0.2**	**0.2**	**0.4**	
DyeVert Plus ASP	350	350	350	
Secondary market size ($m)	**66.2**	**71.3**	**137.5**	

3a. Procedures

We define Osprey's secondary market as diabetic (ex CKD) patients undergoing Coronary Angiograms and PCI procedures. Whilst diabetes is accepted as a standalone risk factor for CIN, we expect DyeVert Plus will be utilised by hospitals in order of priority for at risk CIN candidates with CKD Stage 3-5 patients and STEMI patients as pioneers. No doubt, more risk

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averse physicians could view diabetes as a material enough standalone risk factor and as such necessitating the use of DyeVert Plus. Published clinical studies indicate ~18% of PCI and angiogram procedures are performed on diabetic patients with normal renal function. We utilise the 18% to isolate the number of diabetes stand-alone procedures in Table 11, above. However, we adopt a degree of conservatism and expect diabetic (ex CKD patients) will form a second wave of hospital sales following initial penetration. We understand this approach mirrors management's current sales focus which is on the DyeVert Plus for CKD patients Stages 3-5.

DyeTect market size: 1.4m procedures, $210.2m (Refer to Table 11, below)

Table 11: DyeTect market size

Source: Heart & Disease Stroke Statistics & EAP Research

Procedures (m) & Market size ($m)	PCI + Angiogram + PAD
Total procedures	2.8
Less	
Core market size	*1.0*
Secondary market size	*0.4*
DyeTect procedures	**1.4**
DyeTect ASP	149
DyeTect market size ($m)	**210.2**

DyeTect extends Osprey's addressable market to patients that are not typically at risk CIN candidates. DyeTect's primary function is for the monitoring and measurement of contrast dye as opposed to dye minimisation. In theory, the addressable market for such procedures is the residual number of procedures from PCI, Angiograms and PAD ex Osprey's primary/core and secondary markets. Given the product is yet to launch (4Q17) it is difficult to gauge practical demand for the product. Our sales estimates for DyeTect at this point are marginal, (2.5% of group sales by the time the company is breakeven).

Conservative assumptions

We believe we have adopted an inherently conservative approach to estimating the market size for Osprey. Specifically;

Geographical: We have kept our market estimates exclusively to the United States as this region is management's primary focus until breakeven. However, post breakeven there is potential for Osprey to commence selling into Western Europe, notably Germany, UK and France. The aggregate population of these 3 countries relative to the US is ~65%. Utilisng this metric, the potential Osprey primary market size is 0.65m procedures across Germany, UK and France. We note Osprey has currently placed a representative in Germany with the primary focus to increase its understanding of the market before it expands into it.

Stratified Market: We have based our market estimates on the CIN risk factors detailed in published literature and assumed this is how it works in practice. In reality, it's likely that a proportion of the US cardiologists/ nephrologists would adopt a more risk averse approach in immediately administering DyeVert Plus on standalone diabetic patients (thereby making the primary market larger than we first thought.

Organic market growth: We assume no growth in procedures from the published 2010 data on angiograms and PCIs. We note the number of procedures between 2006 and 2010 contracted by 4%, primarily on the back of over-utilisation/ inappropriate use of procedures. On this basis we have just assumed the market size of angiograms and PCI's has remained flat rather than growing. The next round of data will assist us to rebase our assumptions, with the likelihood they prove to be conservative, in light of an ageing US population and an increase in the prevalence of obesity and diabetes (risk factors to cardiovascular diseases).

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SECTION 5: GUIDELINES TO REDUCE CIN

The most influential way to change clinical practice is for industry bodies and or medical journals to recommend an approach based on evidenced based clinical research. Given the concern around kidney damage, there have been numerous attempts from both a pharmacological and interventional perspective to attempt to reduce the incidence of CIN. The Guidelines of the American College of Cardiology Foundation (ACCF), the American Heart Association (AHA) and the Society for Cardiovascular Angiography and Interventions (SCAI) established a consensus statement on the Best Practices in a cardiac catheterisation lab where angiogram and percutaneous procedures are performed.

According to the guidelines, hydration and minimising the contrast dose (ie dye levels) were recommended as the preferred protocol. **Both approaches are to be delivered in concert and neither should be used to replace the other**. Total contrast administered to the patient must also be monitored in real time and limited where possible. **Osprey's DyeVert Plus is well positioned to cater to the requirements of these guidelines and currently is the only option available for addressing this requirement**.

Clearly, a big risk for Osprey is the potential for an alternative approach to emerge that would be preferable to reducing dye load in a patient undergoing a procedure. For a complete review of the alternative approaches on offer we outline each in turn below with reference to the recommendations of the ACCF, AHA and SCAI. The recommendations are categorised by the matrix below in Table 12. This matrix highlights the treatment effect and whether the approach should be used along with the quality of clinical evidence. To date, there is no compelling alternative approach to Osprey's solution.

Table 12 Applying classification of recommendation and level of evidence in reducing CIN
Source: ACCF, AHA and SCAI

SIZE OF TREATMENT EFFECT

ESTIMATE OF CERTAINTY (PRECISION) OF TREATMENT EFFECT	CLASS I *Benefit >>> Risk* Procedure/Treatment **SHOULD** be performed/ administered	CLASS IIa *Benefit >> Risk* *Additional studies with focused objectives needed* **IT IS REASONABLE** to perform procedure/administer treatment	CLASS IIb *Benefit ≥ Risk* *Additional studies with broad objectives needed; additional registry data would be helpful* Procedure/Treatment **MAY BE CONSIDERED**	CLASS III *No Benefit* or CLASS III *Harm* Procedure/ Test / Treatment COR III: No benefit — Not Helpful / No Proven Benefit COR III: Harm — Excess Cost w/o Benefit or Harmful / Harmful to Patients
LEVEL A Multiple populations evaluated* Data derived from multiple randomized clinical trials or meta-analyses	■ Recommendation that procedure or treatment is useful/effective ■ Sufficient evidence from multiple randomized trials or meta-analyses	■ Recommendation in favor of treatment or procedure being useful/effective ■ Some conflicting evidence from multiple randomized trials or meta-analyses	■ Recommendation's usefulness/efficacy less well established ■ Greater conflicting evidence from multiple randomized trials or meta-analyses	■ Recommendation that procedure or treatment is not useful/effective and may be harmful ■ Sufficient evidence from multiple randomized trials or meta-analyses
LEVEL B Limited populations evaluated* Data derived from a single randomized trial or nonrandomized studies	■ Recommendation that procedure or treatment is useful/effective ■ Evidence from single randomized trial or nonrandomized studies	■ Recommendation in favor of treatment or procedure being useful/effective ■ Some conflicting evidence from single randomized trial or nonrandomized studies	■ Recommendation's usefulness/efficacy less well established ■ Greater conflicting evidence from single randomized trial or nonrandomized studies	■ Recommendation that procedure or treatment is not useful/effective and may be harmful ■ Evidence from single randomized trial or nonrandomized studies
LEVEL C Very limited populations evaluated* Only consensus opinion of experts, case studies, or standard of care	■ Recommendation that procedure or treatment is useful/effective ■ Only expert opinion, case studies, or standard of care	■ Recommendation in favor of treatment or procedure being useful/effective ■ Only diverging expert opinion, case studies, or standard of care	■ Recommendation's usefulness/efficacy less well established ■ Only diverging expert opinion, case studies, or standard of care	■ Recommendation that procedure or treatment is not useful/effective and may be harmful ■ Only expert opinion, case studies, or standard of care

To put the above classification system into context, the most convincing approach would be Class I (Benefit/Risk) , Level A (Efficacy) approach which according to the matrix above carries a "SHOULD be performed" guideline assessed on a level of evidence that involved multiple randomised clinical trials. It should be noted that no approach achieved this top classification.

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The next best approach is Class I and Level B, **satisfied by dye volume reduction and hydration therapies**. We highlight some of the different approaches below and indicate how they were assessed according to the ACCF, AHA and SCAI guidelines.

Pharmacological (By order of guideline preference)

- **High Dose Statin Therapy** in statin naïve patients has shown efficacy in preventing CIN. It is currently regarded as reasonable preventive therapy**. Guidelines for this therapy is Class IIa (it is REASONABLE to perform) based on Level A evidence** for Statin Naïve patients and Level B evidence for Chronic Statin Therapy patients

- **N-acetyl-cysteine (NAC) –** has been used via Intravenous and oral formulations for the prevention of CIN. However, a clinical trial of 2,308 patients found that NAC achieved results no better than the placebo. According to the above guidelines this approach was classified **as Class III (NO BENEFIT) with Level A evidence.**

- **Sodium Chloride hydration and Sodium bicarbonate therapy** have been suggested as a method to reduce renal injury. However, a randomised, double blinded trial in diabetic patients with impaired renal function failed to achieve any statistical significance and **therefore was not assessed by the above organisations.**

Novel interventional therapies

Novel interventional therapies are increasingly preferred as a means of preventing CIN, along with modifiable risks:

- **Reduction of Dye load –**The volume of contrast media should be minimised in patients with a creatinine clearance <60 mL/min. In this approach, a contrast media delivery method is used to assist with the reduction of contrast load. Whilst not specifically mentioned, Osprey's DyeVert Plus is the only product catering to this approach. We analyse the specific clinical trials used to assess DyeVert Plus in more detail on the following pages but note dye reduction was classified as **Class I (procedure SHOULD be performed) based on Level B evidence.**

- **Adequate hydration orally or via IV:** Suggested practice focuses on oral hydration as preconditioning, IV hydration peri-procedural, or a combination of both, however no significant mortality benefit was demonstrated. Similarly, there has been no trial powered to examine length of time, and fluid composition. Nevertheless, the above guidelines classified preparatory hydration as **Class I (procedure SHOULD be performed) based on Level B evidence.**

- **Direct Renal Protection –** Involves remote ischaemic preconditioning which relates to reducing blood flow to remote tissue, to trigger renal protection. Examples includes a blood pressure cuff inflation on the upper arm or a catheter balloon inflation in the target coronary artery. Whilst results to date show some cause for interest, larger Phase II and III studies are required to confirm efficacy. It looks unlikely that this approach will ever proceed to a Phase II or III clinical trial. **As such the approach has not been considered by the above guidelines.**

- **Hydration Optimisation:** two methods have been trialled Left Ventricular Diastolic Pressure (LVDP) for volume expansion and Renalguard which induces high urine rates following the administration of a diuretic. The problem with both approaches is that the optimum fluid required is difficult to determine. Patients that are under hydrated pose a CIN risk and over-hydration may cause a pulmonary oedema. Nevertheless, LVDP was safe and showed encouraging improvement relative to its control. Both therapies hold promise for higher risk patients **but again further studies are required and until such time unlikely to be included in any guidelines.**

- **Dialysis:** In patients where the filtration process has been compromised by AKD, contrast media can be efficiently removed from blood by Hemodialysis (HD). There have been three studies examining the necessity of immediate dialysis after the injection of contrast media in chronic HD patients. However, the authors found no evidence that

it was effective at preventing contrast nephropathy. In all other patients at risk, it was regarded as too expensive. **As such the approach has not been considered by the above guidelines.**

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SECTION 6: FDA CLINICIAL TRIAL

As outlined above, we believe the Osprey business has been largely de-risked, given FDA approval has been received. There is, however, more to the FDA approval process than is immediately obvious. We detail the outcomes of the FDA approval process below. In short, 3 of the 4 label claims were met. Unfortunately the claim of CIN reduction was not met, which was initially taken very negatively by the market in 2015. Since that time, further trials have demonstrated that DyeVert is contributing to CIN reduction in clinical practice and this is a contributing factor to driving uptake by physicians.

We highlight the results of the AVERT (DyeVert Plus predecessor) FDA clinical trial that attempted to support 4 key label claims. We also consider the evolution of these trial results following a sub-group analysis that was conducted post the initial findings. The four label claims for the AVERT trial are summarised on Table 13, with the trial design and parameters detailed per Appendix 2.

Ultimately, the AVERT trial satisfied 3 out of 4 of its objectives. Whilst the primary objective of dye savings was met, the quantum of savings was lower than initially expected (15% vs an expectation of 35%). Further subgroup analysis (detailed below) highlighted dye savings closer to what was originally expected. In fact, more recent experience has demonstrated the DyeVert Plus system (remembering the trial was conducted using the earlier generation AVERT system) is reliably generating dye savings in excess of 40% in practice.

Table 13: AVERT Trial Results

Source: OSP

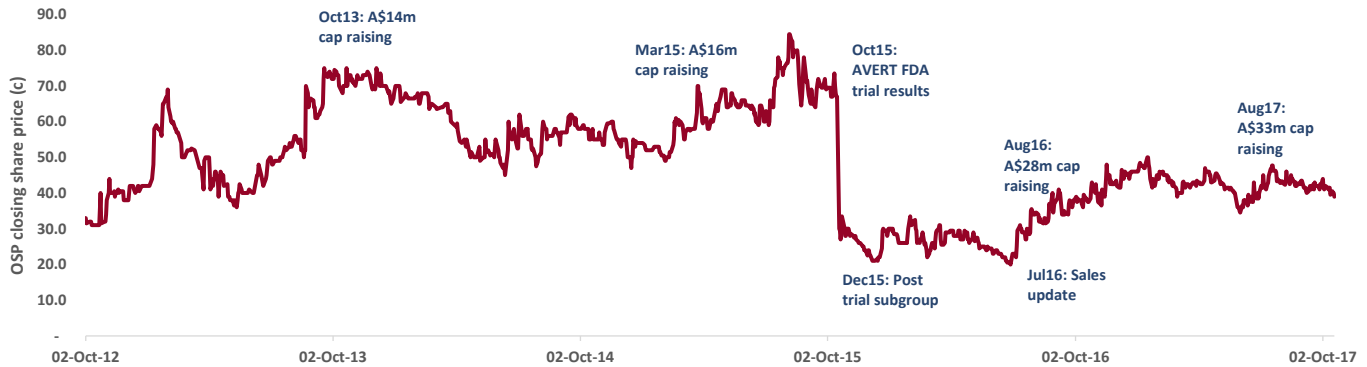
Outcome	Claim	Result Summary
✓	Dye Savings	• 15% less dye used in AVERT group (p=0.022)
✓	Image Quality	• No detectable difference in image quality
✓	Reflux Reduction	• AVERT reduces dye without compromising image quality by reducing reflux
✗	CIN Reduction	• Significant difference in CIN rates between AVERT and Control groups was not observed

Importantly, the claim over reduction of CIN events was not met and this was largely to blame for the aggressive sell off in Osprey shares on 19 October 2015. As discussed within Section 5 of this report, whilst multiple approaches seek to reduce CIN events, none can lay FDA claim over this ability. As such, should the AVERT trial have satisfied this claim, DyeVert Plus would have been positioned as the dominant therapy in CIN reduction. That said the potential damaging effects of dye are well understood **and as outlined previously, the guidelines that have emerged highlight that the preferred protocol for at risk patients undergoing a PCI (for example) is hydration and dye reduction.**

Whilst the FDA claim on CIN reduction would no doubt have increased the speed of initial physician adoption**, it is not unfathomable for DyeVert Plus to record comparable growth as awareness of the product grows.** We believe the retention of Osprey pilot customers highlights DyeVert Plus efficacy in practice which should serve as a catalyst for an increase in physician awareness. Further, the positive data from the post clinical data evaluation **suggests DyeVert Plus in practice can be successful in CIN reduction** as an additional selling point. We detail this data below.

Chart 2: OSP share price vs key events

Source: IRESS & EAP Research



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Contrast dye reduction – Quantum more meaningful on a like for like basis

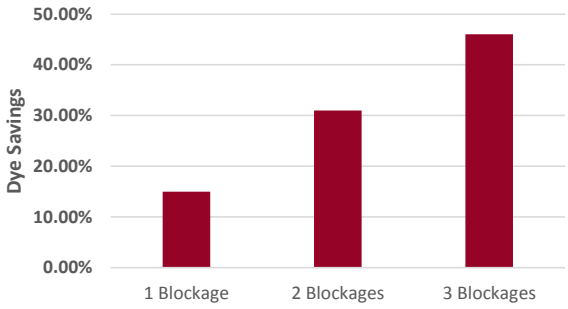
The primary endpoint of the AVERT trial was a FDA marketing claim of contrast dye reduction for the AVERT system. Results of the Trial indicated that on average, 15% less dye was used in the AVERT patient group vs Control. However, closer analysis of the trial design highlights the reason why the trial savings were a little disappointing. The difference in dye savings vs expectations was attributed to;

- The mix of procedures between AVERT patients and Control patients. AVERT patients had more PCI (stenting) procedures than angiograms vs the control group. PCI procedures on average require more use of contrast dye.
- A large range in dye used in AVERT and Control groups. In PCI, dye per case ranged from 13ml- 400ml and in Angiograms 20ml-260ml. The dye volume range is driven by physician style, experience and complexity of procedures.
- Mix of patients with differing number of lesions treated

Subsequent sub-group analysis was undertaken by the Trial Steering Committee and released 18 December 2015**. The data indicates that AVERT offered increased levels of dye savings for more complex, multi lesion PCI cases in the order of 31-46%.**

Chart 3: Clinical Trial Steering Committee – Lesion Analysis

Source: Company disclosures



Since the trial, Osprey have released two new generations of the AVERT known as DyeVert and DyeVert Plus. We understand these systems are delivering dye savings of at least 40% per procedure**.** Relative to AVERT, the DyeVert range delivers larger savings by;

- Eliminating the requirement for physicians to manually adjust the pin of the external control box. The DyeVert self-adjusts for catheter and contrast type.
- The pressure valve on the DyeVert syringe is more sensitive to 'puffs' (small dye injections of 1-3ml). This allows the DyeVert to save dye on puffs whereas the AVERT did not.

The smart syringe and the reusable LCD monitor attached to the DyeVert Plus allows physicians to track and monitor actual dye savings. **The strong retention rates of hospitals within Osprey's initial target regions (San Antonio and Atlanta) reflects the credibility of the 40% savings experienced by individual surgeons.** The ability to reduce contrast dye and indeed obtaining the FDA marketing claim supporting this representation is a key differentiation factor for Osprey's product range relative to competing therapies for CIN reduction.

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Image quality uncompromised via reflux reduction

Image 5: Image without DyeVert Plus
Source: Osprey Medical

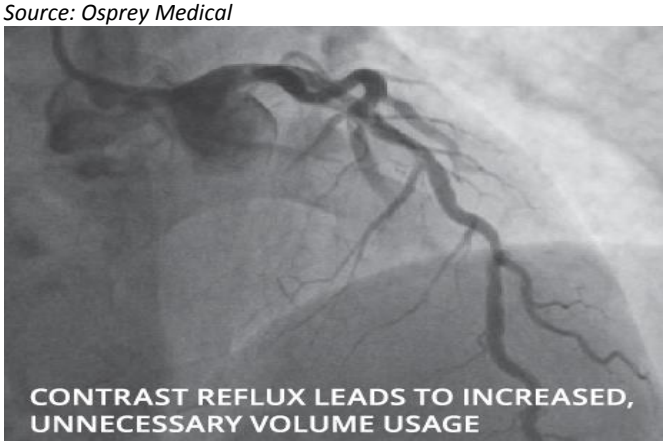
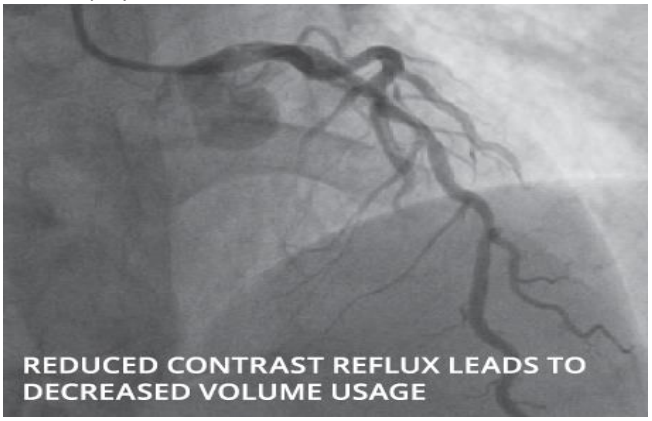


Image 6: Image with DyeVert Plus
Source: Osprey Medical

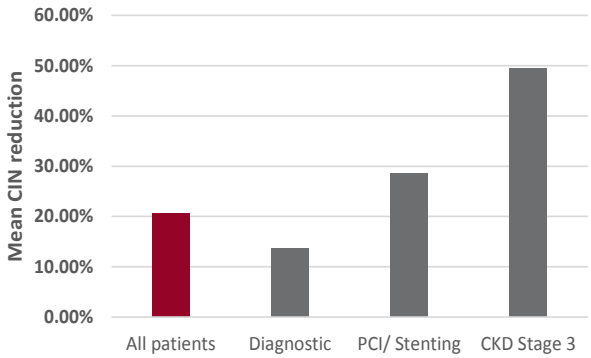


The AVERT Trial was successful in demonstrating that image quality was maintained whilst reducing contrast dye volume. The images above reflect the quality of imaging from an injection of contrast dye into the coronary arteries with and without the use of DyeVert Plus. The key mechanism at work in maintaining image quality is the ability for AVERT and DyeVert Plus to reduce reflux. Reflux is defined as an excess or leakage of dye from the coronary arteries into the aorta. Once in the aorta, the dye subsequently makes its way to a patient's kidney increasing the risk of CIN.

CIN reduction –Trial results not statistically significant but post trial analysis saw a meaningful CIN reduction

Whilst the Trial was successful in demonstrating dye savings using the AVERT, it failed to show a nexus between lower dye use and a lower incidence of CIN events. However, the post-Trial analysis undertaken by the Physician Steering Committee **highlighted a meaningful reduction in CIN events using AVERT based on a more typical industry definition of CIN.** The FDA at the AVERT trial defined CIN as the incidence of an increase in serum creatinine of >0.3mg/dl within 48-72hours after injection of dye vs industry convention of >0.5mg/dl.

Chart 4: Physician Steering Committee Analysis
Source : Company disclosures



Based on the industry standard definition, AVERT managed to reduce CIN events by 20.5% across overall patients in the trial. The FDA stipulated definition of CIN is undoubtedly a higher threshold in kidney protection vs industry convention. However, EAP's review of published papers on the incidence of CIN yielded a definition skewed towards >0.5mg/dl and supports the argument put forward by the Physician Steering Committee. Whilst there is no FDA claim attached for AVERT on CIN reduction, the presence of data supporting this claim based on a more widely accepted physician view should assist DyeVert adoption.

To further highlight the findings of the Steering Committee Chart 4 stratifies the Trial patient population by procedure and patient demography for reduction in CIN events under the definition of >0.5mg/dl. CKD Stage 3 patients (n=264) had the most significant reduction in CIN events of 49.5% which as discussed within Section 3 of this report, is management's primary focus market.

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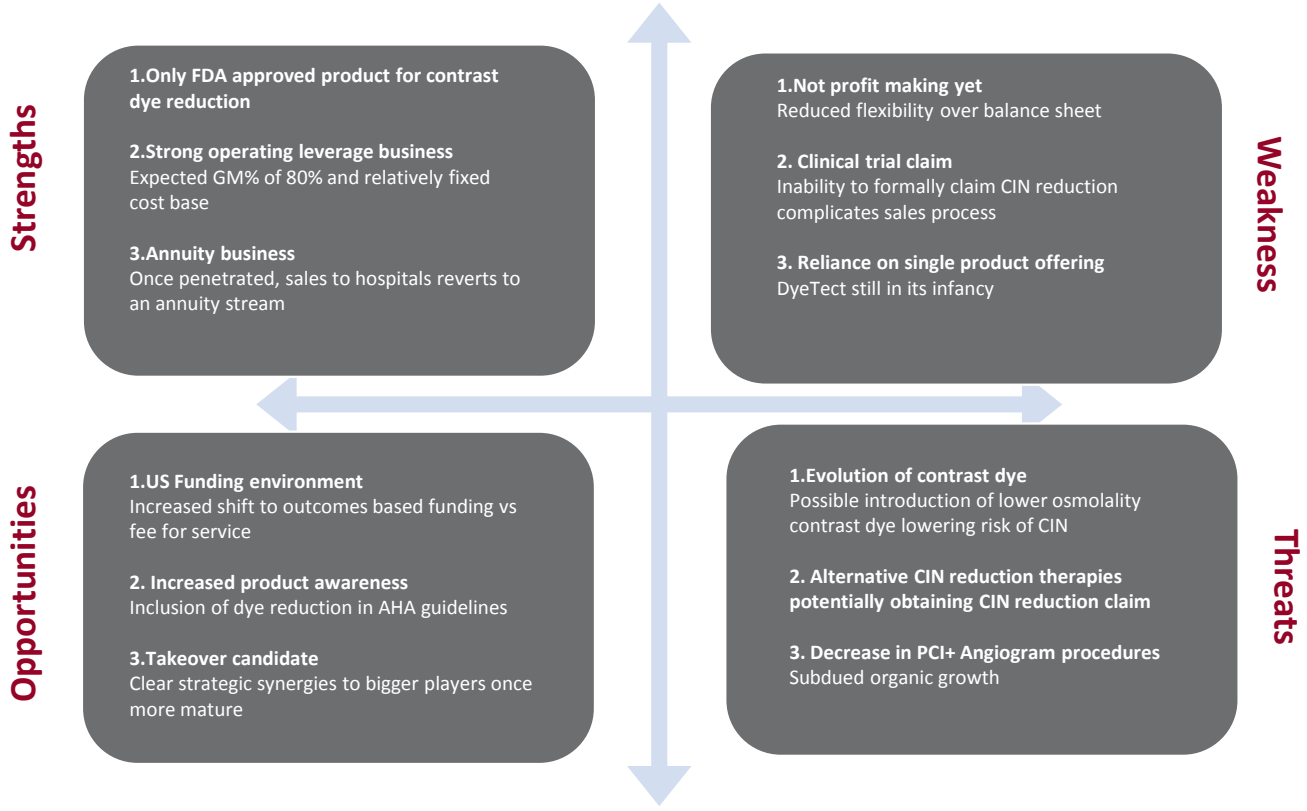
SECTION 7: SWOT (STRENGTHS, WEAKNESSES, OPPORTUNITIES, THREATS)

Image 7: Osprey SWOT

Source: EAP research



Strengths

Only FDA approved product for contrast dye reduction

We understand the DyeVert Plus (and its predecessor, the AVERT) are the only products currently approved by the FDA for a claim of contrast dye volume reduction. As discussed within Section 5 of this report, reduction in dye load is a Class 1 procedure as defined by the leading cardiology bodies in reducing the incidence of CIN. The exclusive ability to market this claim provides Osprey with a key competitive advantage relative to other CIN reduction therapies currently on the market.

Strong operating leverage business

Forecast GM% for DyeVert Plus at steady state is ~75% with EAPf SG&A as a % of sales to materially decline from 645.4% at FY17E to 48% at breakeven as the sales forces starts to ramp up sales in each of the newer regions. We believe there is further expansion for SG&A leverage beyond this point with reference to other medical device manufacturers, RMD (26%) and FPH (26%). No doubt RMD and FPH are more mature businesses, however the gulf in leverage highlights a degree of accretion for Osprey that should be reasonably expected as its suite of product grows.

Low penetration and annuity business once penetrated – growth & defensive stock

We estimate penetration at the end of CY17 to be ~0.4%. In more mature markets like San Antonio, we understand Osprey has achieved ~45% penetration. Whilst it would be naïve to extrapolate San Antonio's performance across the broader group, it does provide a certain degree of perspective on the runway ahead. Once penetrated, sales to hospitals are on a recurring basis due to the single use, disposable syringe of the DyeVert Plus. Further, the bundling of the disposable syringe with the reusable LCD monitor should assist with stickiness of the product and reorders.

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Weakness

Pre break-even and cash burn. Low liquidity for share trading

We acknowledge Osprey's loss making positon is reflective of the stage in its lifecycle as opposed to fundamental issues underpinning the company. However, a reliance on financing cash flows whilst reducing the company's ability to take risks could also promote an over emphasis on cost initiatives. Management's current focus on scaling its sales force suggests this is not currently the case. Osprey's recent round of fund raising should fund the growth of the sales force well beyond break even.

From a trading perspective, Osprey is thinly traded with free float of ~60%. We apply a liquidity penalty of 1% to our cost of capital as part of our DCF valuation.

Clinical trial claim

Osprey was not in a position, via its clinical trial, to claim statistical significance around CIN reduction using the AVERT system, as discussed in Section 6 of this report. This would have unequivocally positioned Osprey as the dominant therapy in CIN reduction. Despite this, DyeVert Plus is the only product that categorically addresses the reduction of dye and is very well supported by clinical guidelines.

Reliance on single product offering

To date, Osprey sales have been derived from a single product offering, albeit one that has been through a number of iterations. The lack of product diversification is apparent, although marginally de-risked through the launch of DyeTect.

Opportunities

US Funding environment

The Hospital Re-admission Reduction Program (HRRP) was established to reduce funding to hospitals with relatively high readmission rates. CMS compares individual hospitals readmission rates to the national average, after adjusting for certain demographic characteristics. As a result, reducing acute kidney injury has been a focus for hospitals given its high correlation with re-admittance. One way to reduce the incidence of AKI is to lower the dye load. Heart attacks and heart failure form 40% of the HRRP case mix by category, highlighting the materiality of Osprey's target market. Refer to Section 8 for further discussion on the US Funding environment opportunity.

Increased product awareness

The publishing of further clinical papers highlighting the benefits of contrast dye reduction should act as a catalyst for increased product adoption. The data underpinning a number of these studies was derived from the National Cardiovascular Data Registry (NCDR) which stores an ever growing repository of data for Coronary Angiogram and PCI procedures. As the penetration of DyeVert Plus grows, it is not unfathomable for potential studies to be performed on its efficacy using NCDR data. Such a study should resonate more strongly with physicians given its potential to be a larger and more representative sample size.

Potential takeover target

Osprey is a niche device player that could round out a cardiovascular device offering particularly for stent manufacturers. Once the value proposition to hospitals is well established any potential suitor could leverage its existing sales force thereby unlocking significant synergies.

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Threats

Evolution of contrast dye

In theory, a key threat to the Osprey franchise is the development of a contrast dye that is non–toxic to the kidneys. Indeed contrast dye from its earliest use has evolved from high levels of iodine (2,000 mOsm/L) to those predominantly in use today known as isomolar. We understand isomolar contrast dye was developed >10 years ago. Despite the progress made to date in lowering the concentration of iodine in contrast dye, we understand there is currently no credible product in the pipeline for an increased safety profile for at risk CIN candidates. Management represented a timeframe in excess of 5 years from initiation to commercialisation should an alternative dye candidate emerge requiring administration via the aorta. The FDA is particularly stringent about approving any drug administered via the aorta acting somewhat as a barrier to entry.

Alternative CIN reduction therapies

As detailed within Section 5 of this report, there are a number of alternative approaches attempting to reduce CIN events. The advancement in hydration therapy should not pose a competitive therapy to OSP given contrast dye reduction is a complimentary approach to hydration in managing CIN. However, the development of pharmacological options could deter DyeVert Plus adoption. To date, none have emerged and none of the existing approaches have the same level of backing in the guidelines as hydration and dye reduction.

Subdued organic growth

As detailed within our estimate of Osprey market size, the number of Angiograms and PCI procedures shrunk by ~4%p.a between 2006 to 2010. There is limited credible data to ascertain the trend post 2010. Whilst the risk of a shrinking market or subdued organic growth is present, our investment thesis is predicated on a product offering that offers double digit growth in the midterm and an annuity revenue stream when meaningful penetration is reached, well beyond 2025. Further, the defensiveness of coronary procedures means a baseline of procedures is still present once utilisation normalises.

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SECTION 8: US FUNDING ENVIRONMENT PENALISING HOSPITAL READMISSIONS

Historically, nearly 20% of all Medicare discharged patients were readmitted within 30 days post discharge. The Hospital Readmission Reduction Program (HRRP), was established in an attempt to address the ~$1bn financial cost to Medicare arising from re-admission. The HRRP was established to penalise hospitals with relatively high readmission rates arising from a selective case mix of initial hospitalisation events. The conditions scrutinised for re-admission included acute myocardial infarction, heart failure, pneumonia, chronic obstructive pulmonary disease (COPD) and hip/knee replacements. Before comparing a hospital's readmission rate to the national average, CMS adjusts for certain demographic characteristics of both the patients being readmitted and each hospital's patient population (such as age and illness severity). As a result, reducing acute kidney injury has been a focus for hospitals given its high correlation with re-admittance. One way to reduce the incidence of AKI is to lower the dye load. Heart attacks and heart failure form 40% of this case mix by category highlighting the materiality of Osprey's target market in the context of HRRP. Importantly, under HRRP, hospitals with readmission rates exceeding the national average are penalised by a reduction in payments across all Medicare admissions as opposed to just individual specialties.

The value proposition for DyeVert Plus under HRRP resides in its ability to reduce the number of readmission cases (particularly surrounding the incidence of CIN) from a coronary procedure. Whilst the HRRP has been in existence since 2013, the increased severity of the penalties (referenced per chart 5) could serve as a further catalyst for the adoption of DyeVert Plus. For the first year (FY13), the maximum penalty was 1% of the hospital's base Medicare inpatient payments, increasing to 2% for 2014 and the maximum 3% starting in 2015. **Total penalties from hospital readmissions have increased by 82% between FY13 and FY17 driven by the higher penalty rate and by an increase in the number of hospitals penalised.**

We highlight that under HRRP, the average penalty for hospitals in San Antonio and Atlanta in FY17 was 0.2% and 0.3% respectively. Whilst the primary geographical determinant for Osprey's sales reps is the pre disposition of residents with kidney damage, we assessed the attractiveness of these regions from a HRRP perspective. We averaged the penalty rate of hospitals above 0.1% and the corresponding number of hospitals that met this criteria as of FY17 (Chart 6). On average, all other regions had penalty rates exceeding that of San Antonio and Atlanta which is directionally positive in assisting DyeVert's adoption.

Chart 5: HRRP penalties and % of hospitals penalised
Source : Kaiser Family Foundation

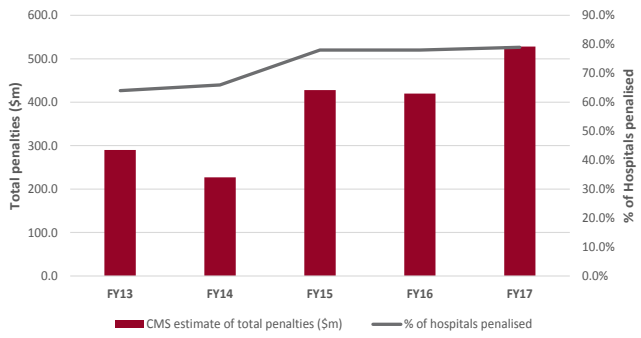
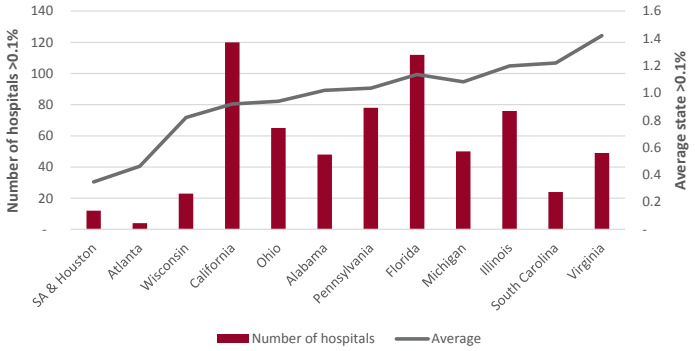


Chart 6: Average HRRP penalty by state with OSP rep
Source : CMS, Kaiser Family Foundation & EAP Research



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SECTION 9: CASHFLOW IS KING

We present our estimates of Osprey's operating and investing cashflow across 1Q16A to 4Q21E per Chart 7, with 2Q21E forecast to be the cashflow breakeven point for the company. Our sales estimates for FY21E is $40m and our estimates incorporate a degree of conservatism vs management's expectations of cashflow breakeven by 1HCY20 (annualised sales of $25m.) The ability for Osprey to breakeven by 2Q21E is undoubtedly hinged on DyeVert Plus volume growth. With reference to Chart 9, we forecast unit sales CAGR growth of +132.4% across CY16A to CY21E, noting YTD FY17A growth of +230.4% was achieved vs pcp. Based on this volume forecast, meaningful operating costs leverage should be expected with operating costs per unit at breakeven ~$235per unit and ~$219 for CY21E (compared to close to $3,000 in FY17). We are further comforted by the experience of the first two jurisdictions selling the AVERT/DyeVert. Both San Antonio and Atlanta, despite the slowdown in new hospitals signing on, have not seen a slowing of unit sales growth in these regions as the penetration of use in existing hospital customers increases.

Chart 7: Quarterly cashflow & sales

Source: Company disclosures & EAP estimates

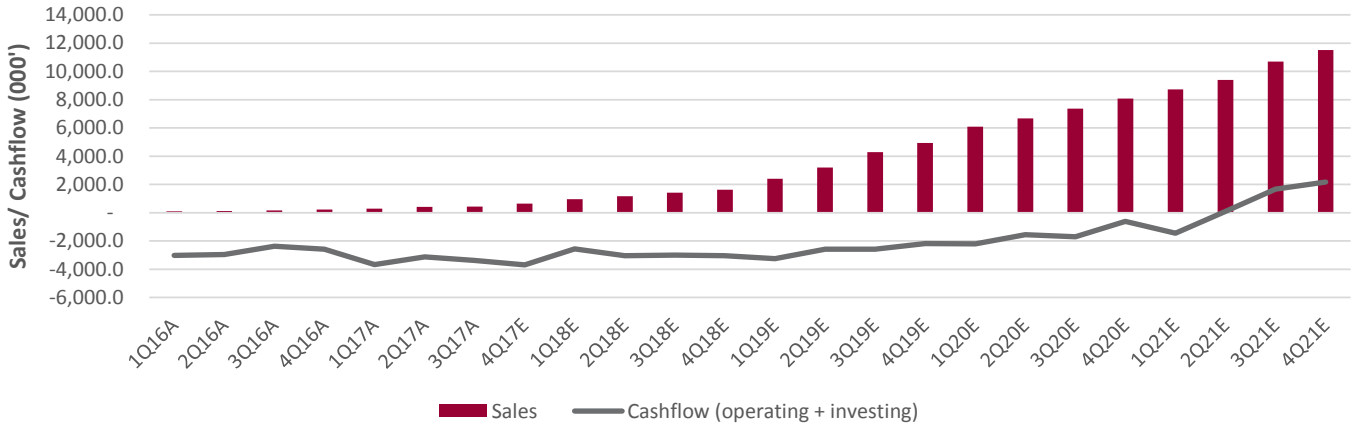


Chart 8: Annual cashflow & sales

Source : Company disclosures & EAP estimates

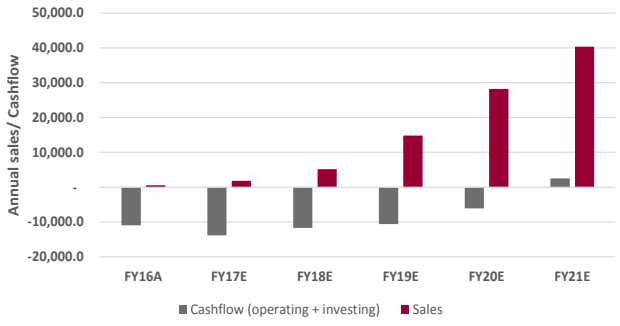
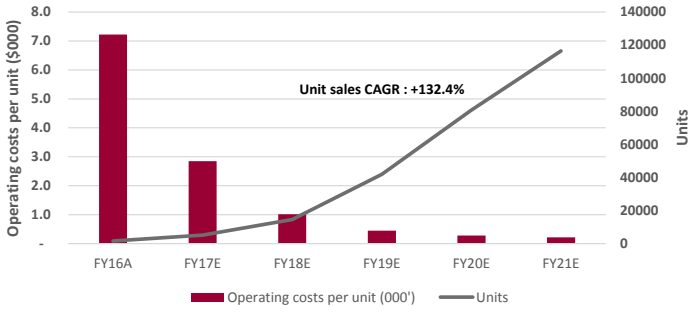


Chart 9: Operating costs per unit & Unit sales

Source : Company disclosures & EAP estimates



Cash burn

With reference to Chart 8,Osprey's CY16A cash burn was $10.9m ($0.9m per month) and estimated to be $13.8m in CY17E ($1.15m monthly run rate). We understand CY17 is expected to represent peak cash burn largely from the sales force ramp and launch costs of the DyeVert Plus. Looking forward into CY18E and CY19E, we estimate a gradual softening of the cash burn to $0.9m per month in CY18 with cashflow break even in 2QCY21. Management expect to be break even by 1HCY20.

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SECTION 10: SALES PROFILE

Each quarter, Osprey discloses key metrics around sales to provide some additional colour as to the momentum and pipeline of sales coming from the significant investment in its sales force. We explain the definition and how to interpret the following disclosures;

- **Unit Sales** – units sold in the period is made up of new orders from new hospital customers right through to repeat orders from existing hospital customers. Refer to Chart 10 below.
- **Hospitals purchasing and hospitals in the pipeline:** Management separately disclose hospitals that have progressed to the evaluation stage for purchasing. Hospitals 6 months and longer in the pipeline are removed from this disclosure to avoid misrepresentation of the pipeline. We understand average hospital conversion rate is 85%. It is worth clarifying, that there are hospitals that have been taken out of the pipeline figure because they breached the 6 month inactivity hurdle but subsequently purchased. This can be explained by the approval process at some hospitals being more bureaucratic than others.

Chart 10: Quarterly and annual unit sales
Source: Company disclosures

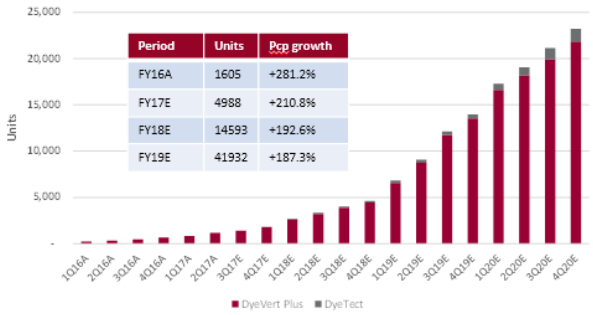


Chart 11: Hospitals pipeline and hospitals purchasing
Source: Company disclosures

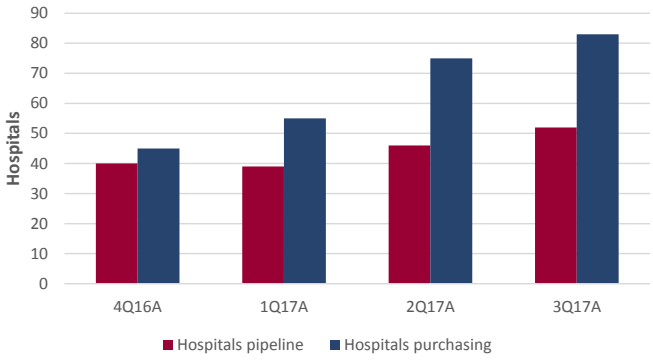
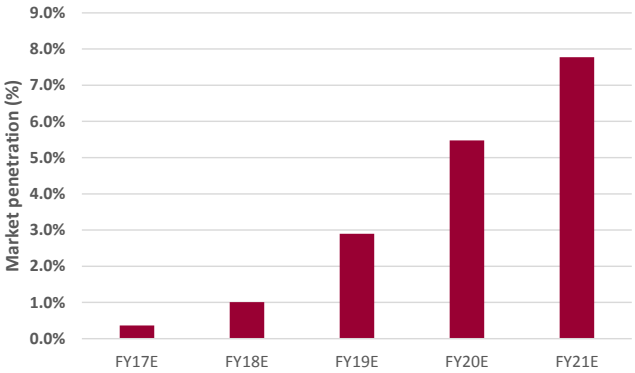


Chart 12: Estimated market penetration
Source: EAP estimates



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Hurricane Harvey and Irma temper 3Q17 growth

It is important to be mindful of recent adverse weather conditions and the impact on some of Osprey's more mature sales regions, namely San Antonio and Atlanta. This has caused a hiatus in the company's growth profile in 3Q17A. Encouragingly, these events resulted in a stalling of growth in 3Q17A to 8% vs 2Q17A but is already showing signs of a rebound for 4Q17E. PCI procedures do not disappear and the disruption caused by Hurricane Harvey (mid Aug17 to early Sep17) and Hurricane Irma (early Sep17 to mid Sep17) will benefit sales in 4Q17E. The aggregate of both regions accounted for ~55% of Osprey group sales in 2Q17A. Geographically there was no notable disruption to the newer regions where more recent sales rep hires have been placed. The trajectory of sales growth in these regions delivered excellent growth to compensate for Atlanta and San Antonio recording negative growth.

Drilling down a little further, it is easy to rationalise the impact on Osprey in light of the "emergency status" that was placed on key hospitals in the region. We understand that hospitals in Houston, Miami and Fort Lauderdale were on Emergency only status for a period of ~5 days. Similarly, Hurricane Harvey put various hospitals on emergency only status for ~3 days in San Antonio and Georgia. These services have returned to normal and we now expect growth to return to more normalised consecutive growth rates with perhaps some catchup being obvious in 4Q17E.

Osprey Revenue Model

We provide our unit sales forecasts below and the methodology we have used for calculating revenue. This calculation represents only the US market for both DyeVert Plus and DyeTect. Whilst we recognise the importance of the EU, Osprey are in the process of installing a EU (German) based sales rep. Proving up this market will take some time and as a result we have elected not to include it in our forecasts despite the risks to the upside. Generally speaking, the EU is a slower adopter of new technology vs the US and therefore we are not expecting a replication of the launch profile as experienced in San Antonio and Atlanta. It is also worth noting, the average sales price decline in FY20 is mainly reflective of product mix as the lower priced DyeTect ($149) comes on line. In FY20, we have assumed DyeTect represents only 2% of group sales.

Table 14: Osprey Revenue Model

Source: Company disclosures & EAP estimates

Metrics	FY16A	FY17E	FY18E	FY19E	FY20E	FY21E
Per sales rep per hospital (A)	5	3	4	5	6	7
Hospitals (B)	32	76	122	182	256	343
Per sales rep (A*B) = C	161	235	453	917	1,613	2,329
Sales reps (D)	10	21	32	46	50	50
Units (C*D)	**1,605**	**4,988**	**14,594**	**41,932**	**80,674**	**116,475**
ASP	*364*	*355*	*353*	*353*	*349*	*346*
Revenue	**585**	**1,772**	**5,148**	**14,798**	**28,188**	**40,314**
Growth						
Per sales rep per hospital		*-39.6%*	*20.1%*	*35.9%*	*25.3%*	*8.0%*
Hospitals		*142.2%*	*60.5%*	*49.0%*	*40.5%*	*33.7%*
Sales reps		*112.5%*	*51.8%*	*41.9%*	*9.3%*	*0.0%*
Unit growth		***210.8%***	***192.6%***	***187.3%***	***92.4%***	***44.4%***
Hospitals per sales rep	*3*	*4*	*4*	*4*	*5*	*7*
Hospitals growth	*472.7%*	*142.2%*	*60.5%*	*49.0%*	*40.5%*	*33.7%*
Revenue growth	***237.8%***	***202.9%***	***190.5%***	***187.4%***	***90.5%***	***43.0%***

The success of Osprey relies on its ability to increase penetration within established hospitals (current customers) and to sell into new hospitals. The former should grow with increased product awareness and the latter through an expansion of Osprey's sales force.

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Looking at the individual line items in Table 14 above, we make the following observations;

Units sold per sales rep into each hospital. On average, we expect the units sold per sales rep per hospital to decline in CY17 due to the significant increase in sales reps hired in the period. Each new rep is expected to take ~3 to 4 months of lead time prior to sales conversion. In the years that follow, this number should increase as the annuity style of ongoing orders outweighs newly signed hospital contracts.

Average Hospitals: Number of hospitals utilising DyeVert Plus and DyeTect. The key driver underpinning the expansion in hospital numbers is the recruitment of sales representatives across new territories in the US. On a group basis, each sales rep sold to 3 hospitals on average in CY16 and we forecast will sell to 5 in CY20. The San Antonio sales rep had 16 hospitals purchasing in CY16 which is consistent with management's expectations of ~10-15 hospitals per sales rep. In a further 2 years management expect this figure should double.

Sales reps: Osprey's sales reps are a key component in driving product awareness. We understand management only employs sales reps with an established local physician network. With regard to Chart 13, the number of sales reps indicates minimal churn with 2Q17 reflecting a decline of 1 sales rep. Management anticipate hiring 50 sales reps by CY19 with 26-28 in place by end of CY17. Our model forecasts the average number of sales reps contributing during the year at a slower rate of 22 in CY17.

We chart the key metrics on Osprey sales rep utilisation below, noting the risk to the upside to our earnings estimates should Osprey's other regions achieve quicker penetration.

Sales rep snapshot and utilisation

Chart 13: Sales Rep hires

Source : Company disclosures & EAP estimates

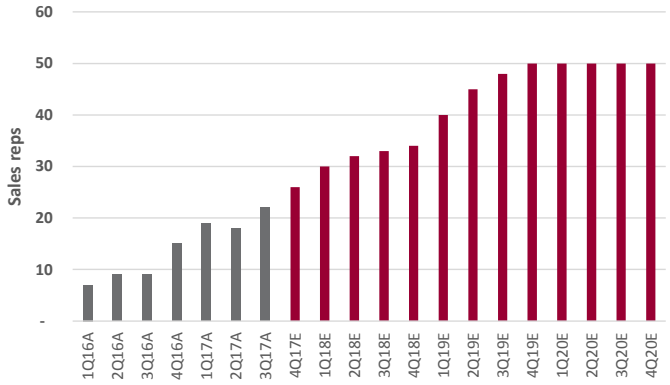
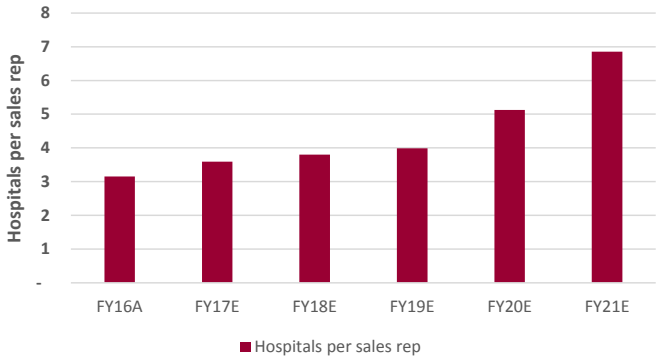


Chart 14: Hospitals per sales rep

Source : Company disclosures & EAP estimates



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SECTION 11: SALES TERRITORIES – THE EXPERIENCE SO FAR

Chart 15: Sales mix by territory 1Q16A vs 2Q17A

Source : Company disclosures & EAP estimates

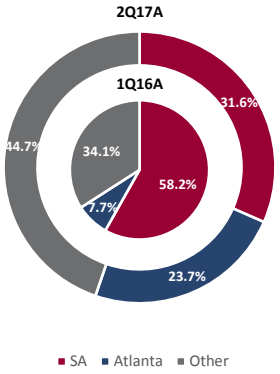
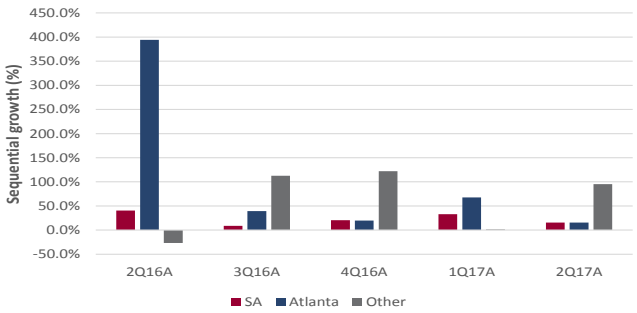


Chart 16: Sequential sales growth by territory

Source : Company disclosures



YTD 2Q17A San Antonio has recorded 677 units and remains as Osprey's largest single sales territory (31.6% 2Q17A). With reference to Chart 16, sequential sales growth in San Antonio has been broadly maintained, averaging ~20% across 2Q16A to 2Q17A. San Antonio remains the most developed and penetrated market for Osprey. Despite the number of hospitals remaining static at 16 over 1Q17A and 2Q17A the rate of growth has continued via penetration. However, this cannot last forever and the diversification of sales reps assists with this. Having said that, we do not believe San Antonio is ex-growth given penetration of existing hospitals is ~40% and there several other neighboring cities currently untapped. Atlanta has experienced a faster ramp up in growth than San Antonio.

Osprey is currently selling into 17 territories in the US with its 22 sales rep spread across these territories. **Table 15** summarises the number of Osprey sales reps per state as of 2Q17A. Management expect to add an additional 4-6 sales reps from 3Q17A across an equivalent number of states by the end of CY17. With regard to profitability by region, we understand SA and Atlanta are both cash flow positive with SA taking 9 quarters post launch and Atlanta half that time. There is limited disclosure with regard to the profitability status of the other regions.

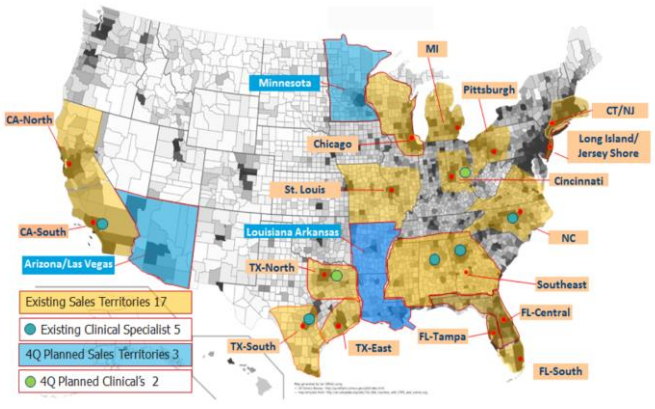
Table 15: Osprey sales reps as of 2Q17A

Source : Company disclosures

Regions	Start	To date	Units 2Q17A
TX South (San Antonio)	1Q14	39 months	363
GA (Atlanta)	2Q16	12 months	272
CA South	2Q16	12 months	
TX North	2Q16	12 months	
TX East	2Q16	12 months	
MS/ AL	2Q16	12 months	
FL South	2Q16	12 months	
FL North	2Q16	12 months	
NC/VA	2Q16	12 months	
CA North	4Q16	6 months	
TX Midwest	4Q16	6 months	
IL South	4Q16	6 months	
IL North	4Q16	6 months	
SC	4Q16	6 months	
OH West	4Q16	6 months	
WI	1Q17	3 months	
PA	1Q17	3 months	
OH East	1Q17	3 months	
MI	1Q17	3 months	
Others ex SA and Atlanta			**514**

Image 8: Osprey sales reps + pipeline

Source : Company disclosures



Choice of Regions

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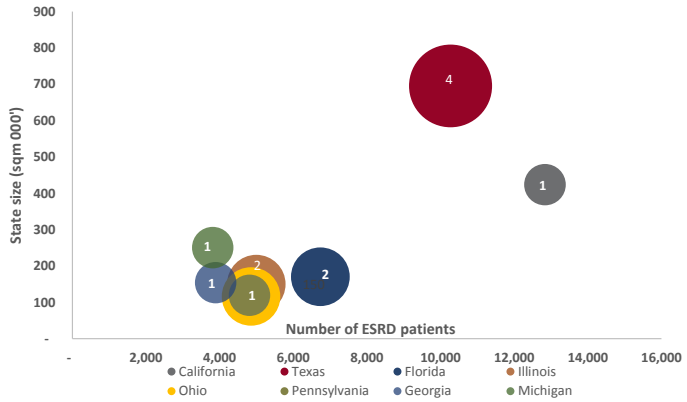
Osprey's choice of sales territories is focused in states with the highest number of residents with kidney damage. **Out of the top ten states in the US with End Stage Renal Disease (proxy for CKD), Osprey is currently selling into 8 of them.** The top state is California where Osprey has 2 sales rep and Texas as the second highest where Osprey has its highest number of sales reps (4) as reflected per **Chart 17.** It is worth noting that whilst California and Texas constitute the largest addressable market, they also represent the largest area (per sqm) of these top ten states and therefore a meaningful barrier to reaching Osprey target group. Therefore, it is encouraging that management has targeted these regions from the outset with the majority of Texas and California sales reps on board for 12 months as a minimum.

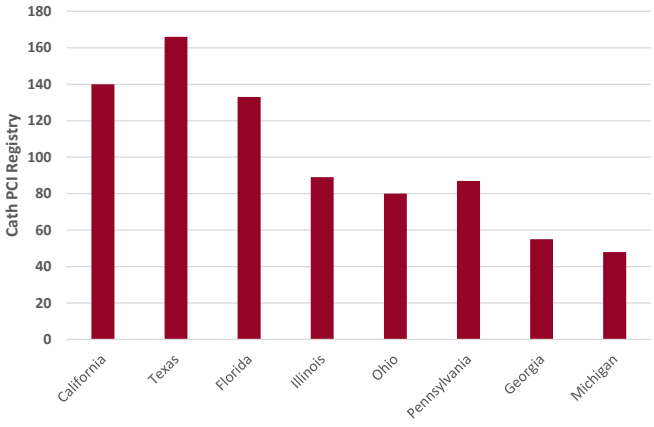
Chart 18 highlights the number of CathPCI Registries by the eight states referenced above. The CathPCI registry represents hospitals participating with the NCDR on data collection for PCI and diagnostic catheterisation procedures which we utilise as a proxy for Osprey target customers. By contrast, the top 8 states below recorded 798 CathPCI registries in aggregate, (~15% hospitals penetration) highlighting the scope for expansion in hospital numbers.

Chart 17: Osprey sales territories, ESRD and state size
Source : USRDS



**Size of bubble depicts number of Osprey sales reps as of 2Q17*

Chart 18: Number of CathPCI Registries
Source : NCDR



The Europe opportunity

Osprey currently has a single representative in Germany with the primary aim of better understanding Osprey's commercial opportunity in Western Europe. Key considerations for management prior to commercial launch would include funding mechanism (differs between Germany, France and the UK), direct sales vs distributor model and sales strategy as unlike the US, we understand the European market is less mature with regard to data collection and monitoring of CIN events. Given the complexity of these considerations, we take comfort in management focusing near term efforts and funding in the US. Europe however has the potential to contribute relatively quickly post launch given the ~3-4 year lead time (assuming representative is retained in Germany until Osprey is cash flow positive).

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APPENDIX 1: THE EVOLUTION OF OSPREY'S PRODUCT OFFERING

AVERT

A class II medical device as classified by the FDA given FDA 510(k) clearance on 23 August 2013. Marketing approval from the FDA was for "controlled infusion of dye". This system has now been discontinued.

Image 9: AVERT System
Source : Osprey Medical

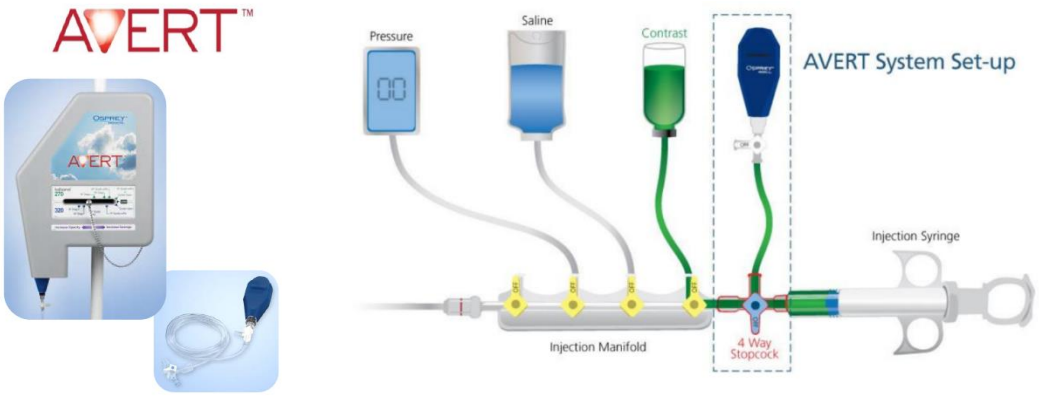

Table 16: AVERT System Characteristics and Benefits
Source : Osprey Medical

Characteristics	Benefits
Manual injection system	Dye reduction up to 35%
Re- usable contrast modulator with manual settings for different dye types	Uncompromised image visualisation

AVERT PLUS

A class II medical device as classified by the FDA given FDA 510(k) clearance on 16 December 2014. Marketing approval from the FDA was for "controlled infusion of dye". This system has now been discontinued.

Image 10: AVERT PLUS System
Source : Osprey Medical

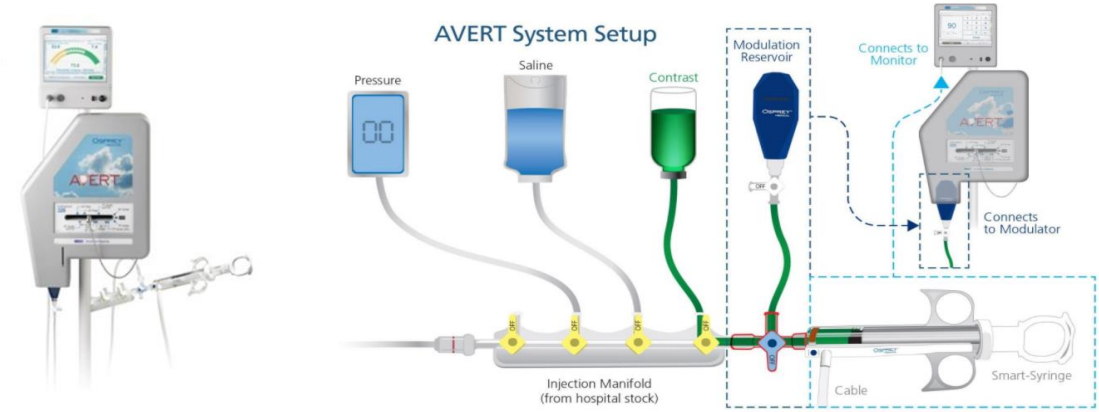

Table 17: AVERT PLUS System Characteristics and Benefits

Source : Osprey Medical

Characteristics	Benefits
Disposable smart syringe	Dye reduction up to 35%
Re- usable LCD display to monitor maximum dye dosage levels	Uncompromised image visualisation
Real time display of dye volume monitoring	

DYEVERT

A class II medical device as classified by the FDA given FDA 510(k) clearance on 11 October 2015. The FDA expanded the Marketing approval of DyeVert to include dye savings, image quality and reflux reduction on 8 February 2016. This version is currently being replaced by the DyeVert Plus system.

Image 11: DyeVERT System

Source : Osprey Medical

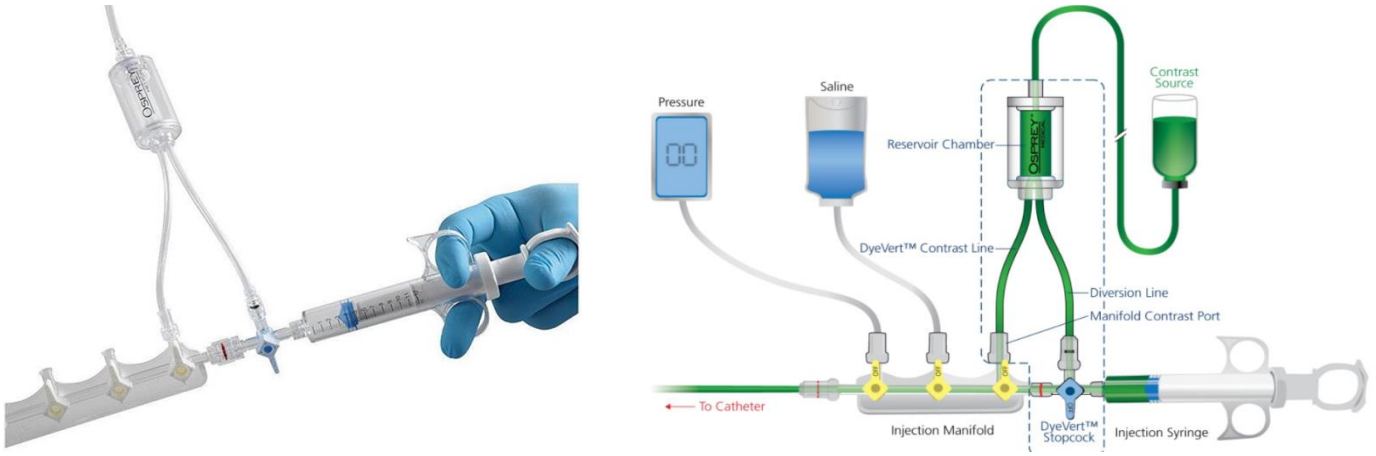

Table 18: DyeVert System Characteristics and Benefits

Source : Osprey Medical

Characteristics	Benefits
Disposable smart syringe	Dye reduction up to 40%
Self adjust smart syringe for catheter and contrast type	Uncompromised image visualisation
Pressure valve on syringe more sensitive to small dye injections	

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DYEVERT PLUS

A class II medical device as classified by the FDA given FDA 510(k) clearance on 9 March 2017.

Image 12: DyeVert Plus System

Source : Osprey Medical

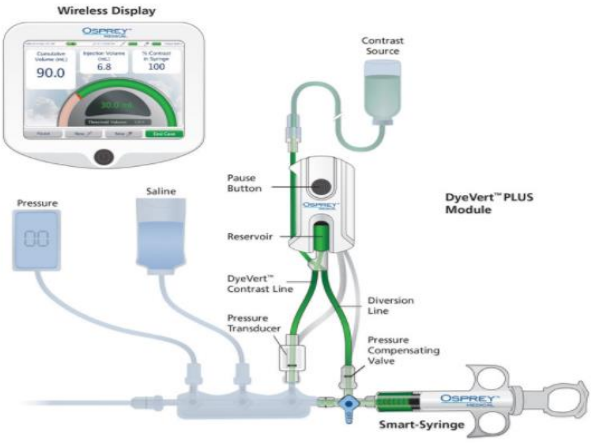

Table 19: DyeVert Plus System Characteristics and Benefits

Source : Osprey Medical

Characteristics	Benefits
Disposable smart syringe	Dye reduction up to 40%
Self adjust smart syringe for catheter and contrast type	Uncompromised image visualisation
Pressure valve on syringe more sensitive to small dye injections	
Re-usable wireless LCD display to monitor maximum dye dosage levels	
Real time display of dye volume monitoring	

DYETECT

Target market is patients without chronic kidney disease, who will benefit from dye monitoring and accurate dose accounting.

Image 13: DyeTect System

Source : Osprey Medical

Table 20: DyeTect characteristics and benefits

Source : Osprey Medical

Characteristics	Benefits
Disposable smart syringe	Real time dye volume monitoring
Re-usable wireless LCD display to monitor contrast dye volume	No dye reduction capability

Competitors:

- Medline Angiographic Control Syringe
- Acist Angiographic Injection System

APPENDIX 2: AVERT CLINICAL TRIAL DESIGN

Device: AVERT system

Purpose: Assess the AVERT System device, which is designed to limit the volume of CM (Contrast Media) utilized, during a staged therapeutic coronary PCI or angiogram

Study design: Randomised, single blinded, parallel assignment study

Enrolment: 578 patients with advanced CKD undergoing PCI

Study Start Date: December 2013

Study Completion Date: September 2015. Results disclosed October 2015.

Primary Completion Date: July 2015 (Final data collection date for primary outcome measure)

Trial Locations: 39 sites across the following states: California, Florida, Georgia, Illinois, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, New York, North Carolina, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, Victoria (Australia), Auckland (NZ).

Principal Investigator: Roxana Mehran, MD, FACC

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FINANCIAL SUMMARY

Osprey Medical Inc **OSP**
As at: **2/11/2017** **Recommendation: Positive** **Share Price** **$0.40**

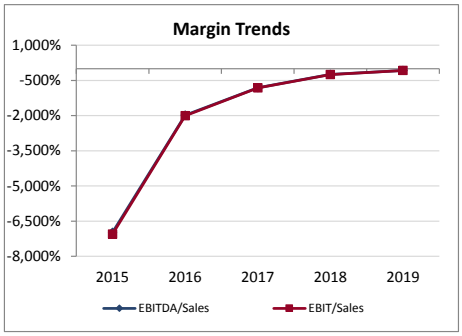
Year end	December	2016A	2017E	2018E	2019E
INCOME STATEMENT					
Sales Revenue	**$m**	**1**	**2**	**5**	**15**
Consolidated EBITDA	$m	(12)	(14)	(13)	(11)
D&A	$m	0	0	0	0
Consolidated EBIT	**$m**	**(12)**	**(15)**	**(13)**	**(12)**
Net Interest	$m	0	0	0	0
Tax Expense	$m	0	0	0	0
Associates/Minorities	$m	0	0	0	0
Adj NPAT	**$m**	**(12)**	**(15)**	**(13)**	**(12)**
NRIs	$m	0	0	0	0
Reported NPAT	$m	(12)	(15)	(13)	(12)
Shares on Issue (end period)	m	129	170	170	170
EFPOWA	m	94	142	170	170
EPS	**¢**	**(6.2)**	**(5.1)**	**(3.8)**	**(3.4)**
DPS	¢	0.0	0.0	0.0	0.0
Franking	%				
GROWTH/PROFITABILITY RATIOS					
Sales Growth	%	237.8%	202.9%	190.5%	187.4%
EBITDA Growth	%	NA%	NA%	NA%	NA%
EBIT Growth	%	NA%	NA%	NA%	NA%
EPS Growth	**%**	**NM%**	**NM%**	**NM%**	**NM%**
EBITDA/Sales	%	(1,986.2 %)	(810.1%)	(243.4%)	(77.0%)
EBIT/Sales	%	(2,009.2 %)	(820.4%)	(248.1%)	(79.1%)
EBIT Interest Cover	x				
Tax Rate	%	0.0%	0.0%	0.0%	0.0%
ROE	**%**	**(54.2%)**	**(45.6%)**	**(66.8%)**	**(158.1%)**
ROFE	**%**	**5,424.6%**	**2,906.3 %**	**795.0%**	**430.6%**
CASH FLOW					
EBITDA	$m	(12)	(14)	(13)	(11)
Change in Working Capital	$m	0	0	2	1
Other	$m	1	0	0	0
Gross Operating Cash Flow	**$m**	**(11)**	**(7)**	**(11)**	**(10)**
Net Interest Paid	$m	0	0	0	0
Tax Paid	$m	0	0	0	0
Net Operating Cash Flow	**$m**	**(11)**	**(14)**	**(11)**	**(10)**
Maintenance Capex	$m	0	0	0	0
Free Cash Flow	**$m**	**10**	**11**	**(12)**	**(11)**
Dividends Paid	$m				
Expansionary Capex	$m	0	0	(1)	(1)
Acquisitions	$m	0	0	0	0
Asset Sales	$m	0	0	0	0
Dividends Received	$m				
Shares Issues/Buybacks	$m	21	0	0	0
Other	$m	(21)	0	1	1
Increase in Net Cash/(Debt)	**$m**	**10**	**11**	**(12)**	**(11)**
GOCF/EBITDA	%	91%	47%	87%	87%
Total Capex/Sales	%	71.1%	14.7%	13.6%	4.7%
Total Capex/Depreciation	x	(3.4)	(1.5)	(3.1)	(2.3)

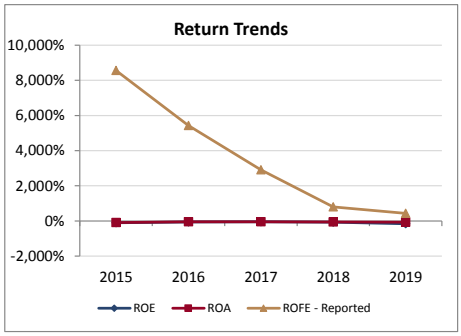
Source: Company data, E&P Research estimates

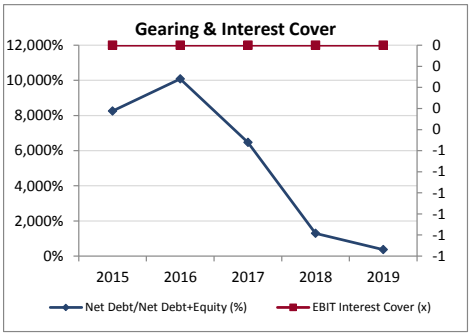
Year end	December	2016A	2017E	2018E	2019E
VALUATION METRICS					
PER	x	NM	NM	NM	NM
P/EG (2YR)	x				
Dividend Yield	%	0.0%	0.0%	0.0%	0.0%
EV/EBITDA	x	NM	NM	NM	NM
EV/EBIT	x	NM	NM	NM	NM
P/BV	x	3.7	3.3	5.5	14.1
BALANCE SHEET					
Assets					
Cash	$m	22	32	21	10
Working Capital	$m	0	1	2	5
PP&E	$m	1	1	1	2
Intangibles	$m	0	0	0	0
Investments	$m	0	0	0	0
Other	$m	0	0	0	0
Total Assets	**$m**	**23**	**34**	**24**	**17**
Liabilities					
Debt	$m	0	0	0	0
Working Capital	$m	0	1	4	9
Other	$m	0	0	0	0
Total Liabilities	**$m**	**1**	**2**	**5**	**10**
Equity	**$m**	**22**	**32**	**19**	**7**
Capital Employed	**$m**	**0**	**(1)**	**(2)**	**(3)**
Net Debt/(Cash)	$m	(22)	(32)	(21)	(10)
Net Debt/Equity	%	(101%)	(102%)	(108%)	(137%)
Net Debt/EBITDA	x	1.9	2.3	1.7	0.9
Working Capital/Sales	%	(3%)	(28%)	(40%)	(24%)
D&A/PP&E	%	(22.3%)	(26.7%)	(20.4%)	(20.2%)

DCF VALUATION			$m	$/share
Risk Free Rate	5.0%	Enterprise Value	160	$0.47
Market Risk Premium	6.0%	(Net Debt)/Cash	46	$0.14
Beta	1.20	Franking Credits		$0.00
WACC	**13.2%**	**DCF Valuation**		**$0.61**

DIVISIONAL SUMMARY					
Group Revenue	**$m**	**1**	**2**	**5**	**15**
Group EBITDA	**$m**	**0**	**0**	**0**	**0**







Source: Company data, E&P Research estimates

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Positive	Stock is expected to outperform the S&P/ASX 200 over the coming 24 months
Neutral	Stock expected to perform in line with the S&P/ASX 200 over the coming 24 months
Negative	Stock is expected to underperform the S&P/ASX 200 over the coming 24 months
Speculative Buy	Stock has limited history from which to derive a fundamental investment view or its prospects are highly dependent on event risk, *eg.* Successful exploration, scientific breakthrough, high commodity prices, regulatory change, etc.
Suspended	Stock is temporarily suspended due to compliance with applicable regulatory and/or Evans & Partners policies in circumstances where Evans & Partners is acting in an advisory capacity.
Not Rated	Stock is not included in our investment research universe.

Research Criteria Definitions

Recommendations are primarily determined with reference to how a stock ranks relative to the S&P/ASX 200 on the following criteria:

Valuation	Composite of Rolling 12 month prospective multiples and discounted cash flow (DCF), or DCF for resource stocks.
Earnings Outlook	Forecast 2 year EPS growth.
Earnings Momentum	Percentage change in the current consensus EPS estimate for the stock (rolling 1 year forward basis) over the consensus EPS estimate for the stock 3 months ago.
Shareholder Returns	Composite of forecast ROE (rolling 1 year forward basis) and the percentage change in ROE over 2 years.
Debt Servicing Capacity	Rolling 12 month EBIT Interest Cover ratio.
Cyclical Risk	Qualitative assessment of the 2 year outlook for a stock/industry's profit cycle.
Industry Quality	Qualitative assessment of an industry's growth/returns potential and company specific management capability.
Financial Transparency	If we don't understand it, we won't recommend it.

For stocks where Evans & Partners does not generate its own forecasts, Bloomberg consensus data is used. Analysts can introduce other factors when determining their recommendation, with any material factors stated in the written research where appropriate.

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