



Executive Summary

May 2017
ASX: OSP

*Presented by: Osprey CEO & President,
Mike McCormick, and Independent
Expert, Dr. Hitinder Gurm*

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Investment highlights

Positive sales momentum continues

- 10 consecutive quarters of growth in units sold and samples, with 28% growth in Q1 2017 (qoq)
- Cash receipts from customers of US\$291k in Q1 2017, up 41% on Q4 2016 (and 351% on Q1 2016)
- Sales territories in San Antonio, Texas and Atlanta, Georgia are profitable with successful penetration of 70% and 50% of hospitals respectively

Initial addressable market of US\$1.1+ billion with opportunities for growth

- Initially targeting chronic kidney disease patients in the United States which has strong safety, regulatory and economic drivers for adoption
- Expansion into Europe expected in late 2017 following highly successful pilot program
- Key opinion leading physicians supportive of DyeVert technology

Osprey is dedicated to protecting kidneys



Medical device company specialising in the commercialisation of proprietary technologies designed to protect kidneys from the harmful effects of dye

- Commonly performed surgical imaging procedures for the heart and legs require the injection of x-ray dye, which is then cleared by the kidney
- The use of dye in these commonly performed procedures can cause damage because of its harmful effects, which is known as **Contrast Induced Acute Kidney Damage (CI-AKI)**
- **DyeVert and DyeVert Plus are proprietary dye reduction and monitoring technologies designed to protect patients' and their kidneys**



Large addressable market

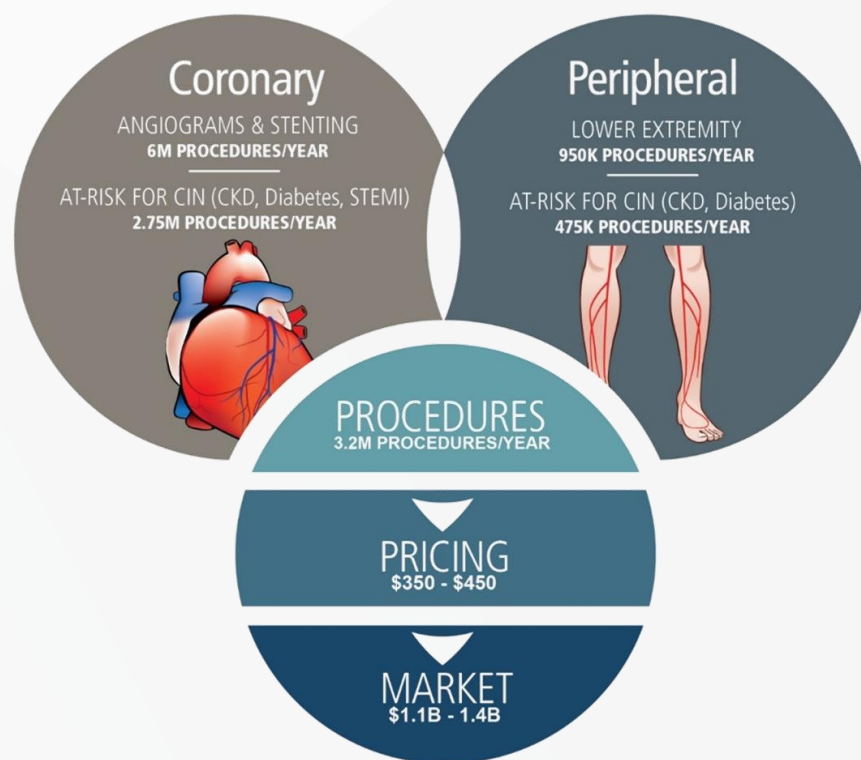
US\$1.1 to 1.4 billion addressable market with initial commercialization focus on the 1.3 million CKD procedures

Market opportunity:

3.2 million procedures per year in the USA and Western Europe which can benefit from DyeVert

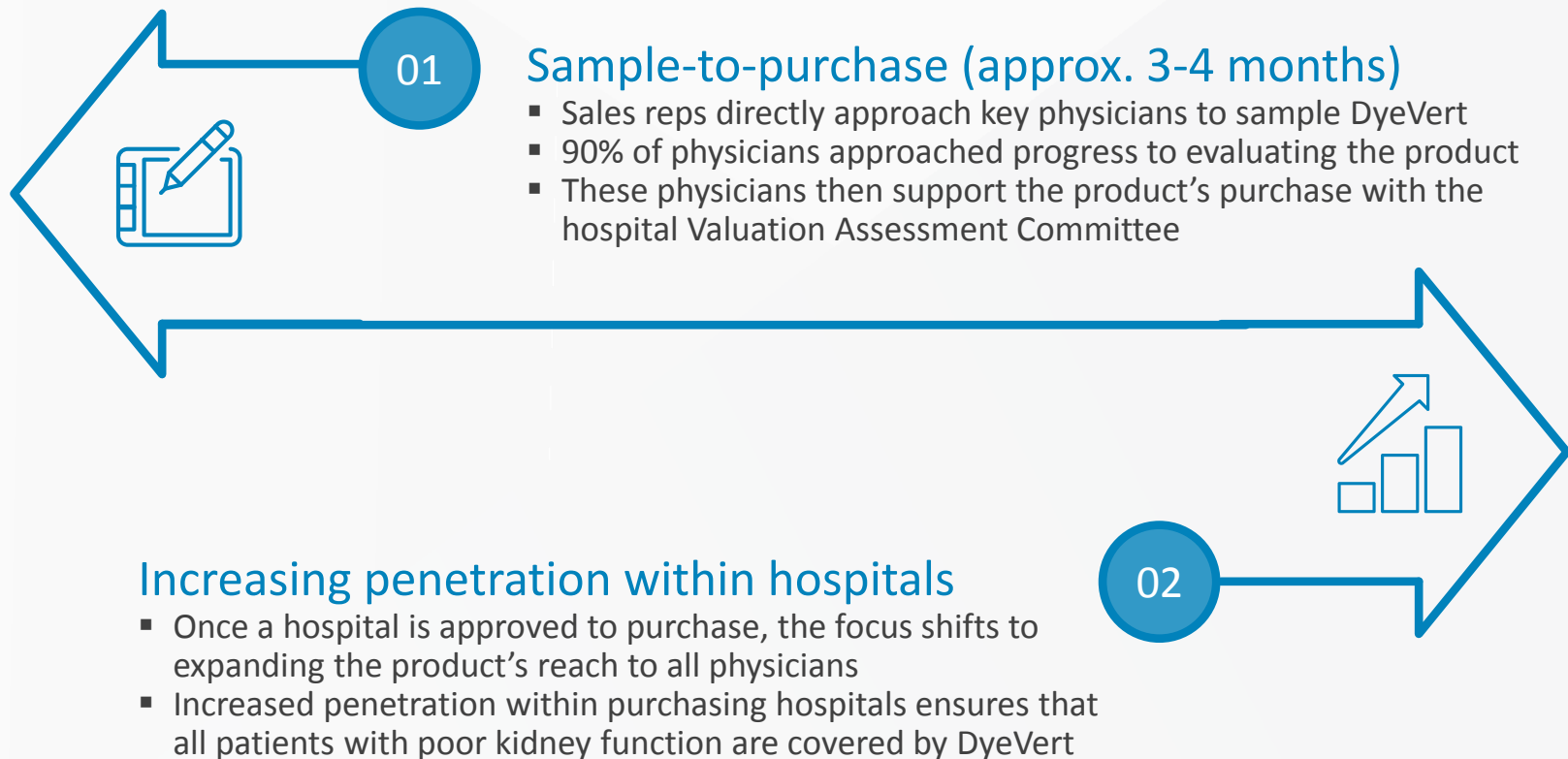
- **CKD:** 1.3 million procedures per year with a 20% occurrence of CI-AKI
- **Diabetes:** 1.0 million procedures per year with a 15% occurrence of CI-AKI
- **STEMI:** 440K procedures per year with a 15% occurrence of CI-AKI
- **Peripheral:** 450K procedures per year with a 15% occurrence of CI-AKI

Average selling price of DyeVert is US\$355



Commercialization approach

Osprey follows a two-step sales process in all territories



Key sales metrics

Osprey's 3 key sales metrics have been consistently positive

1 Quarterly unit sales growth

28% unit sales growth in Q1 2017, as compared to Q4 2016

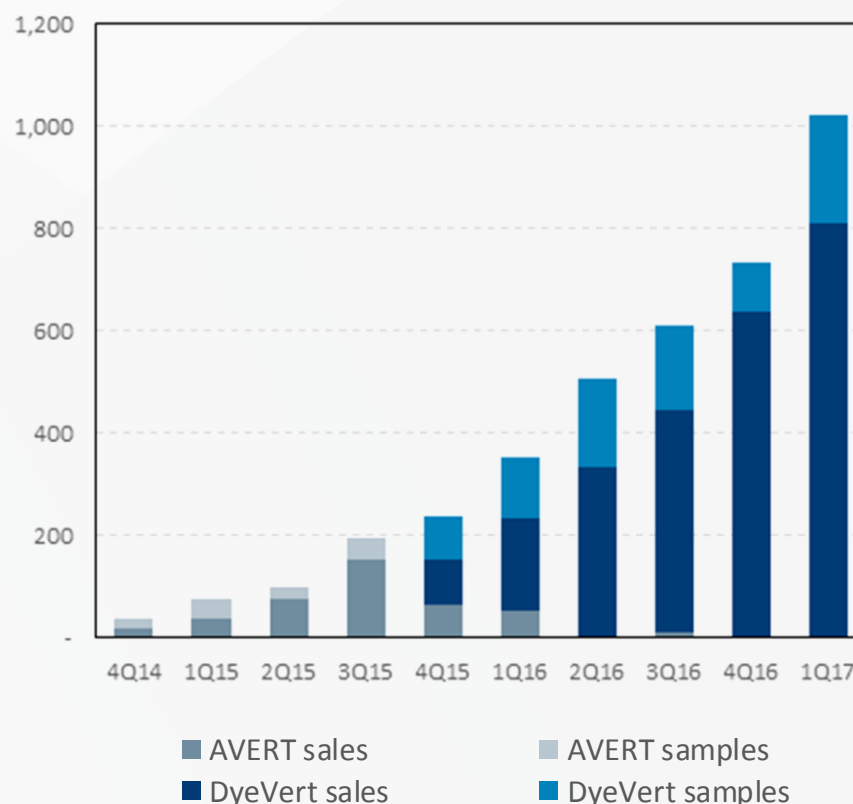
2 New hospitals purchasing DyeVert

22%¹ increase in new hospitals purchasing in Q1 2017

3 Strong pipeline of hospitals

39 hospitals at end of Q1 2017 in the sample-to-purchase process

Quarterly product unit sales & samples since inception

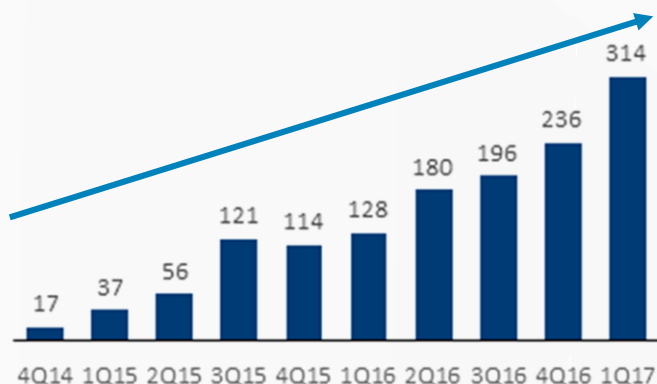


1. Osprey had 55 new hospitals purchasing DyeVert in Q1 2017, up from 45 hospitals in Q4 2016. The announcement released on 18 April 2017 'Appendix 4C' incorrectly calculated this to be 28%

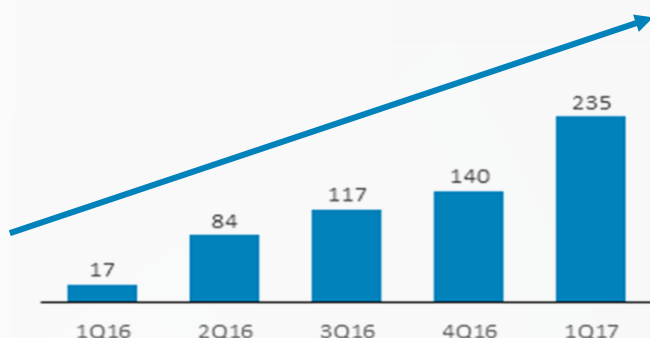
Profitability in two territories

San Antonio and Atlanta sales territories are now profitable

Quarterly product unit sales in San Antonio¹



Quarterly product unit sales in Atlanta



Current:

- **San Antonio and Atlanta both profitable in Q1 2017** with units sold exceeding the cashflow breakeven requirement of 75 units per month (225 units per quarter)
- **70% (16 of 23) of San Antonio hospitals and 50% (11 of 22) of Atlanta hospitals** have approved and purchased Osprey's products

Future:

- **Future hospital growth in San Antonio and Atlanta** driven by **increased penetration** in existing territories and **expansion of sales coverage** into surrounding areas
- **Future growth in utilization of DyeVert** driven by increased physician adoption within existing hospitals

1. Quarterly unit sales fell in Q4 2015 following the introduction of the DyeVert System, as hospitals sampled the new product

Three pillars of sales growth strategy

Aggressive commercialization strategy focuses on new sales representatives and increasing awareness about the importance of kidney protection



Sales territory expansion *(see slides 9 – 10)*

Focus on adding new highly experienced sales reps in territories with the highest rates of poor kidney function



Marketing kidney protection *(see slide 11)*

Focus on marketing the benefits of Osprey's products in protecting patient's kidneys and their ability to help hospitals adhere to national guidelines around dye savings



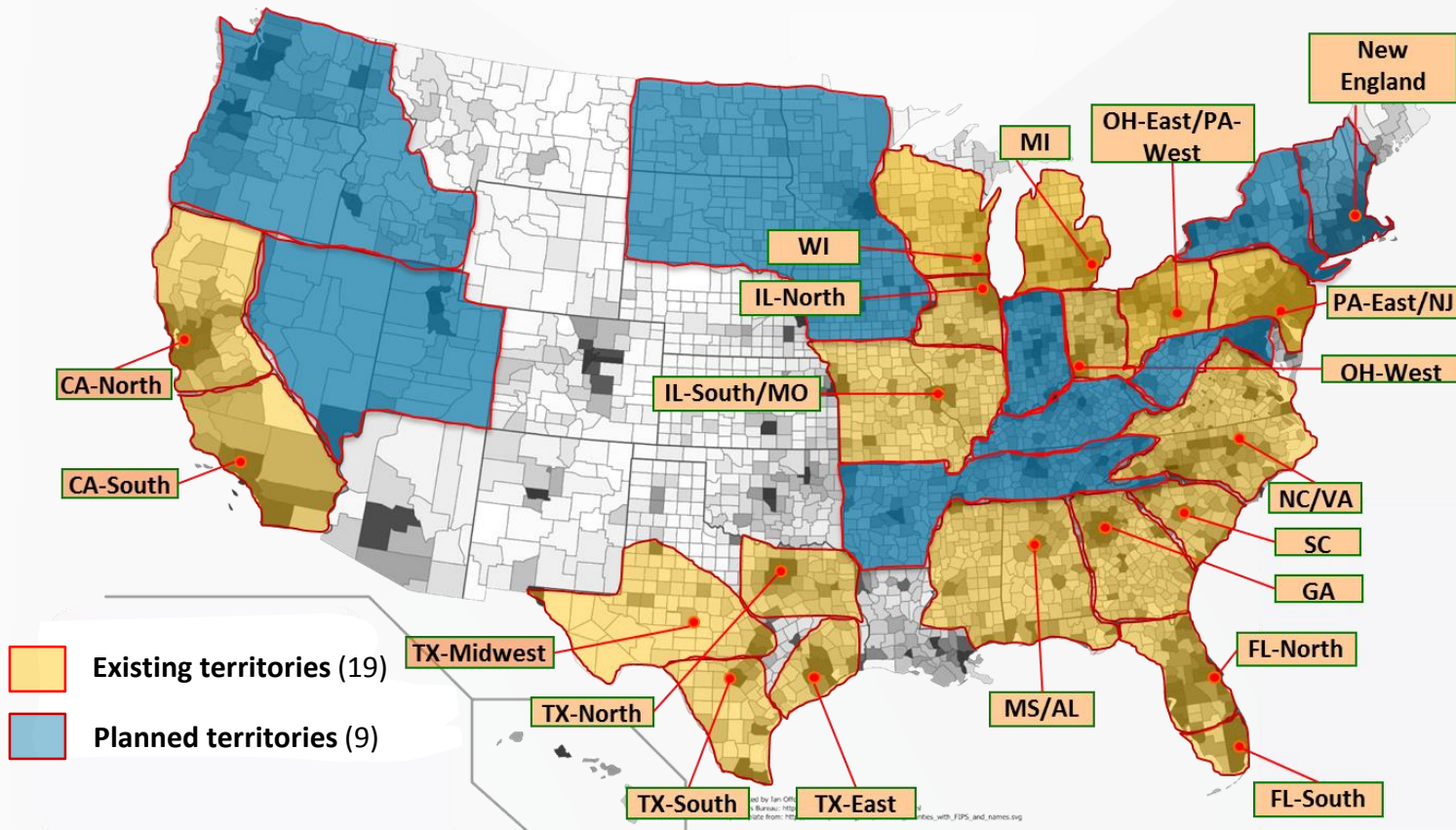
Podium presentations and physician advocates *(see slides 12 – 21)*

Focus on key opinion leading physicians who advocate for the benefits of Osprey's products at key industry conferences



Sales territories

High quality sales rep team strategically positioned in areas with higher instances of kidney damage





Sales management



In Q1 2017, Osprey started recording all sales and sample data in a new customized cell phone app that every sales rep now uses

Issued to all reps and management Mobile Track reports in real time sales metrics and inventory transactions.

With the app in service, Osprey has an accurate account of all devices sold and sampled. The sampled data represents the customer “pipeline” and provides critical sample-to-purchase conversion timeframes (currently 3-4 months) and gives the company aim to reduce the time across accounts.

Improved efficiencies and sales rep management



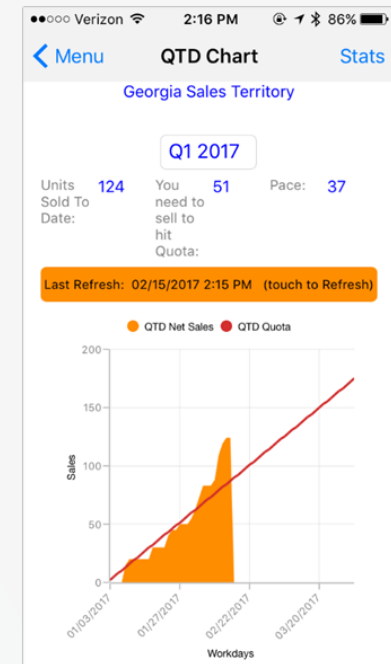
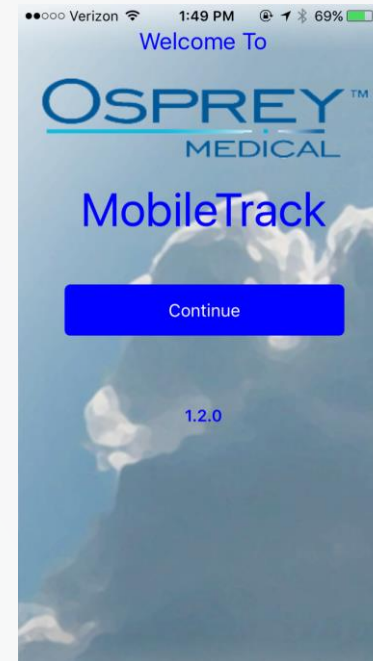
Inventory Management: Instant inventory reconciliation validating Product Model and Lot number



Timeliness of reporting: sampling data is entered in the app and submitted to warehouse for rapid replenishment and sample data/pipeline visibility



Performance Metrics: Sales dashboard provides key measures to reps allowing them to better understand their territory performance





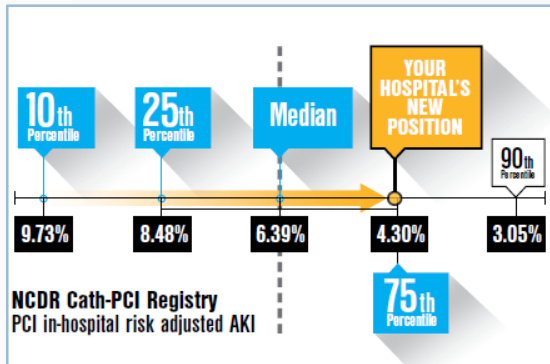
Marketing kidney protection

“Be Kind to Kidneys” campaign is driving adoption of the DyeVert System by increasing awareness for the national dye savings guidelines

The problem

The guidelines

Osprey's products



- Screen for risk
- Increase hydration
- Minimize contrast

DYEVERT PLUS

Is your hospital's AKI score higher than the NCDR national median?

Minimizing contrast volume may reduce the risk of AKI*

HAIRY A HEART. BE KIND TO KIDNEYS
WWW.OSPREYMEDICAL.COM



Only product **FDA** cleared
for contrast reduction



Key opinion leading physicians

Dr. Hitinder Gurm is a leading physician in the cardiology space with a passion for reducing CI-AKI

About Dr. Hitinder Gurm:

Dr. Hitinder Gurm is a Professor of Internal Medicine at the University of Michigan Health System as well as Associate Chief, Division of Cardiovascular Medicine and Chief, Cardiology Section, VA Ann Arbor Healthcare System. He is also the Director of Inpatient Services for the Division of Cardiovascular Medicine and Director, Blue Cross Blue Shield of Michigan Cardiovascular Collaborative (BMC2).

Dr. Hitinder Gurm will be attending investor meetings with Osprey as an independent expert. He has no equity interest in Osprey.

He will be available to discuss the US hospital system, the patient and economic impact of kidney damage, and his experience in using Osprey's DyeVert product.

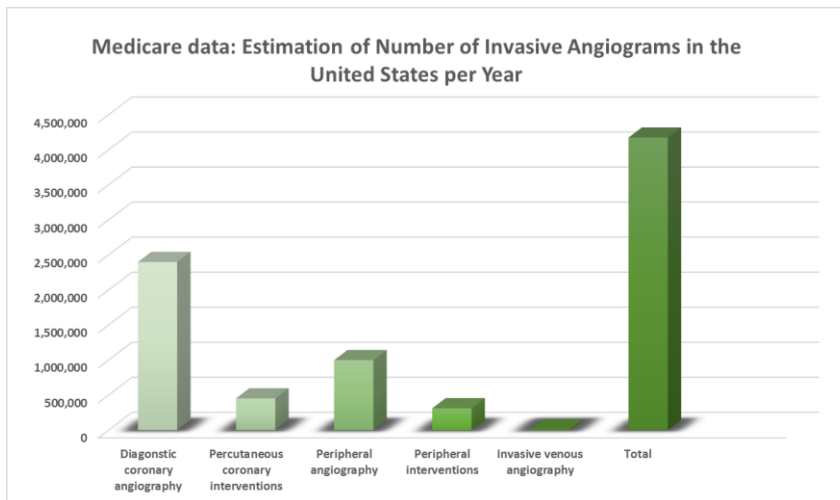


Dr. Hitinder Gurm will be presenting to slides 13 to 21.



Kidney damage from heart procedures

Following coronary angiography/intervention AKI is a problem that is growing with the aging population in the US



Over 4.5M dye based procedures per year in the US

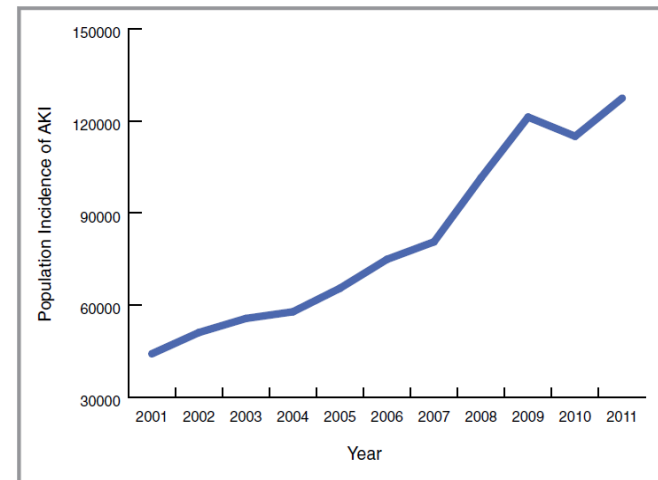


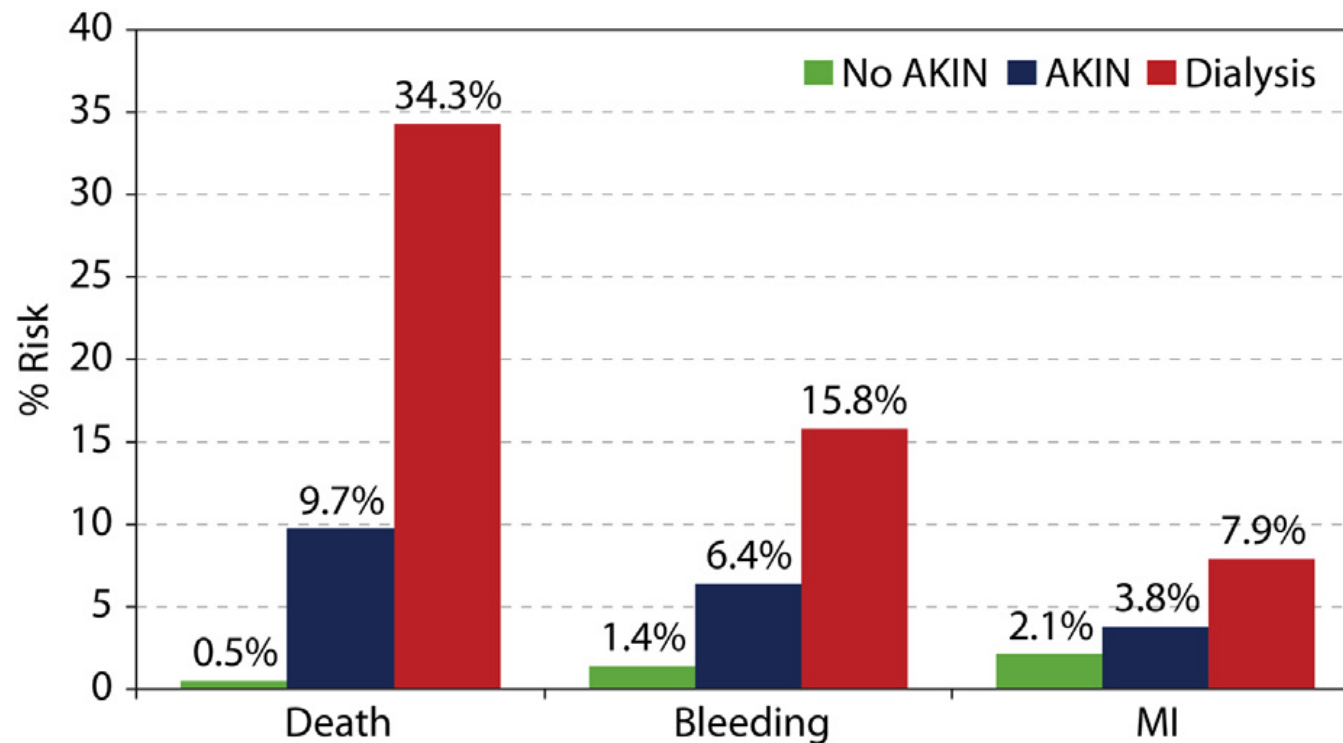
Figure 1. AKI incidence: population incidence of acute kidney injury among cardiac catheterization and percutaneous coronary intervention patients in the United States from 2001 to 2011. AKI indicates acute kidney injury.

Brown J et al. *J Am Heart Assoc.* 2016;5:e002739



AKI outcomes

Following coronary intervention AKI is associated with increased death, bleeding and heart attack (MI)

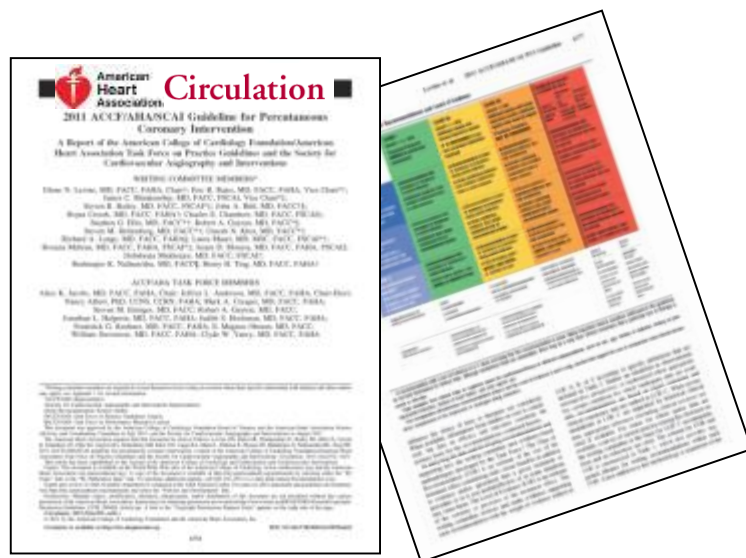


Tsai TT, Patel UD, Chang TI et al. Contemporary Incidence, Predictors, and Outcomes of Acute Kidney Injury in Patients Undergoing Percutaneous Coronary Interventions: Insights from the NCDR Cath-PCI Registry. *J Am Coll Cardiol Interv* 2014; 7: 1-9.



What can we do to reduce AKI

Practice guidelines of cardiovascular societies agree on AKI reduction measures



Contrast-Induced AKI: Recommendations Class I Level B Recommendation

1. Patients should be assessed for risk of contrast-induced AKI before PCI
2. Patients undergoing cardiac catheterization with contrast media should receive adequate preparatory hydration
3. In patients with CKD (creatinine clearance <60 mL/min), the volume of contrast media should be minimized

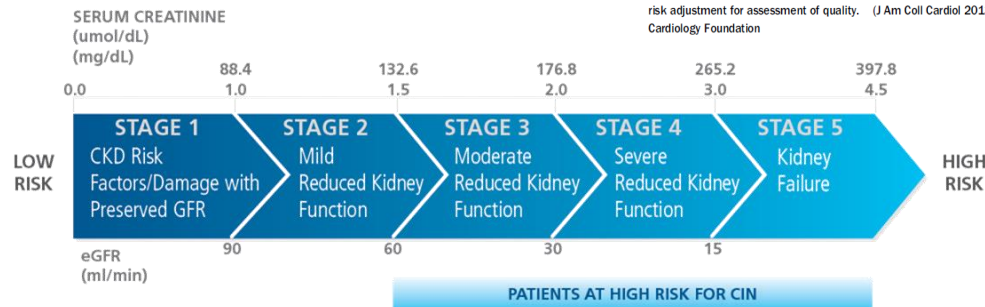


Screen for high risk patients

Mehran Risk Score

Risk Factors	Integer Score
Hypotension	5
IABP	5
CHF	5
Age >75 years	4
Anemia	3
Diabetes	3
Contrast media volume	1 for each 100 cc ³
Serum creatinine >1.5mg/dl	4
OR	2 for 40 - 60
eGFR < 60 ml/min/1.73 m ²	4 for 20 - 40
	6 for < 20

Mehran R, et al. A Simple Risk Score for Prediction of Contrast-Induced Nephropathy After Percutaneous Coronary Intervention. JACC. 2004;44:1393-1399.



BMC2/SCAI

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CLINICAL RESEARCH

Interventional Cardiology

A Novel Tool for Reliability of Renal Complication Prediction in Percutaneous Coronary Intervention

Hitinder S. Gurm, MD,* Milan Sethi, MD, PhD,†
Ann Arbor and Detroit, Michigan; and

Objectives

Background

Methods

Results

Conclusions

The aim of the study was to evaluate the utility of a novel risk score for predicting contrast-induced nephropathy (CIN) in patients undergoing percutaneous coronary intervention (PCI). The study included 1,000 patients who underwent PCI. The risk score was calculated based on serum creatinine, eGFR, and contrast volume. The study found that the risk score was a strong predictor of CIN, with a sensitivity of 0.85 and a specificity of 0.82. The risk score was also found to be a strong predictor of mortality, with a sensitivity of 0.85 and a specificity of 0.82.

The risk of CIN and NR is a common complication of PCI. This risk prediction algorithm may prove useful for both bedside clinical decision making and risk adjustment for assessment of quality. (J Am Coll Cardiol 2013;61:10-6) © 2013 by the American College of Cardiology Foundation

PCI Risk Calculator

Download on the App Store

GET IT ON Google play

Begin the App Now



Hydration for at risk patients

At risk patients should receive adequate pre through post intravenous hydration therapy



	Blue Cross/Blue Shield Michigan	UK HealthCare—Lexington, KY	Kaiser California
Name	Blue Cross Blue Shield Michigan Collaborative (best practices of 13 hospitals)	Normal Saline or Bicarbonate	Poseidon Hydration
Type	Normal Saline	<ul style="list-style-type: none">1 ml/kg/hr (max 100 ml/hr) 12 hrs pre-procedure1 ml/kg/hr (max 100 ml/hr) 12 hrs post-procedure	Sliding scale hydration based on intracardiac pressure measurements (LVEDP)
Pre-Procedure	0.9 normal saline at 1ml/kg for 2 hours pre procedure	<ul style="list-style-type: none">150 meq of sodium bicarbonate in 1 liter of D5W3 ml/kg bolus (max 300 ml) 1 hr pre and1 ml/kg/hour (max 100 ml/hr) during and 6 hours post	Bolus infusion at 3 ml/kg for 1 hour
Intra & post procedure	0.9 normal saline at 1ml/kg for 3 hours post procedure	<p><u>CHF or LVEF<40%</u> NS 0.5 ml/kg/hr(max 50 ml/hr) 12 hrs pre & post</p> <p><u>Emergent Procedures</u> NS bolus of 500-1,000 ml prior to procedure. Hydration during procedure and/or 12 hours after if possible</p>	<ul style="list-style-type: none">5 ml/kg/hr for LVEDP < 13mm hg3 ml/kg/hr for LVEDP 13-18mm hg1.5 ml/kg/h for LVEDP >18mm hg <p>*continued 4 hours post procedure</p>



Renal function based contrast dosing

Using a pre-specified maximum threshold volume based on kidney function

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Interventional Cardiology

Renal Function-Based Contrast Dosing to Define Safe Limits of Radiographic Contrast Media in Patients Undergoing Percutaneous Coronary Interventions

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Ann Arbor, Royal Oak, and Detroit, Michigan; and Miami, Florida

Objectives The aim of this study was to evaluate the association between calculated creatinine clearance (CrCl)-based contrast dose and renal complications in patients undergoing percutaneous coronary interventions (PCI).

Background Excess volumes of contrast media are associated with renal complications in patients undergoing cardiac procedures. Because contrast media are excreted by the kidney, we hypothesized that a dose estimation on the basis of CrCl would provide a simple strategy to define a safe dose of contrast media.

Methods We assessed the association between CrCl-based contrast dose and the risk of contrast-induced nephropathy (CIN) and need for in-hospital dialysis in 58,957 patients undergoing PCI and enrolled in the BMC2 (Blue Cross Blue Shield of Michigan Cardiovascular Consortium) registry from 2007 to 2008. Patients receiving dialysis at the time of the procedure were excluded.

Results The risk of CIN and nephropathy requiring dialysis (NRD) was directly associated with increasing contrast volume adjusted for renal function. The risk for CIN and NRD approached significance when the ratio of contrast dose to CrCl exceeded 2 (adjusted odds ratio [OR] for CIN: 1.16; 95% confidence interval [CI]: 0.98 to 1.37; adjusted OR for NRD: 1.72; 95% CI: 0.9 to 3.27) and was dramatically elevated in patients exceeding a contrast to CrCl ratio of 3 (adjusted OR for CIN: 1.48; 95% CI: 1.27 to 1.66; adjusted OR for NRD: 1.98; 95% CI: 1.21 to 3.24).

Conclusions Our study supports the need for minimizing contrast dose in patients with renal dysfunction. A contrast dose on the basis of estimated renal function with a planned contrast volume restricted to less than thrice and preferably twice the CrCl might be valuable in reducing the risk of CIN and NRD. (J Am Coll Cardiol 2011;58:907-14) © 2011 by the American College of Cardiology Foundation

Contrast-induced nephropathy (CIN) is a common, serious problem of percutaneous coronary intervention (PCI) that is associated with increased morbidity, mortality, and health care cost (1-4). Conditions that heighten the risk of CIN such as chronic kidney disease, diabetes, congestive heart failure, hemodynamic instability, and anemia are not typically modifiable at the time of cardiac catheterization, but other strategies have emerged to minimize the nephrotoxicity of contrast media (4,5).

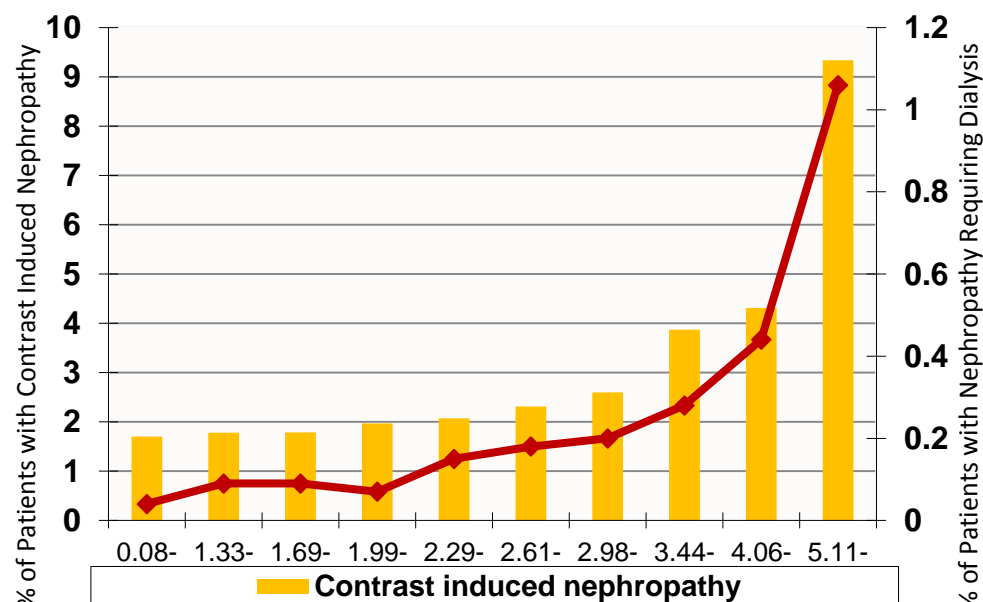
Proven effective preventative measures against CIN in PCI patients include hydration with normal saline and minimization of contrast volume (CV) (6,7). The benefit of N-acetylcysteine or isotonic sodium bicarbonate remains controversial, with considerable disagreement between various studies and meta-analyses (8-11).

Although the need to minimize contrast is generally recognized, it remains unclear as to what is a safe level of contrast. Prior studies support use of maximal acceptable contrast dose (MACD) to determine the threshold for safe contrast exposure customized to each patient (12). The MACD is calculated by 5 ml of contrast/body weight (kg)/baseline serum creatinine (mg/dl). Although MACD

From the *Department of Internal Medicine, Division of Cardiovascular Medicine, University of Michigan Medical Center, Ann Arbor, Michigan; †Department of Cardiovascular Medicine, Invaicent Healthcare, Royal Oak, Michigan; ‡Department of Internal Medicine, St. John Hospital, Detroit, Michigan; §Department of Internal Medicine, Henry Ford Hospital, Detroit, Michigan; and ||Department of Medicine, University of Miami Medical Center, Miami, Florida. The BMC2 (Blue Cross Blue Shield of Michigan Cardiovascular Consortium) registry is funded by Blue Cross Blue Shield of Michigan (BCBSM) and Blue Cross Network, with initial registry development funded by the BCBSM Foundation. The sponsor had no role in study design, analysis, or the decision to present or publish these findings. Dr. Gurm has received research support from Abbott Vascular, Altimed, and Infaludix. Dr. Share is employed by BCBSM. Dr. LaLonde is in the speaker's bureau for Abbott Vascular, Gilead Sciences, Pfizer, and GlaxoSmithKline, and has received research support from Medtronic. Dr. Moscucci has received research support from BCBSM in the past. All other authors have reported that they have no relationships relevant to the contents of this paper to disclose.

Manuscript received February 16, 2011; revised manuscript received May 26, 2011; accepted May 24, 2011.

Downloaded from content.onlinejacc.org by guest on August 17, 2011





How to reduce contrast volume

Multiple strategies should be employed to insure dye volume is as low as reasonable allowable

1. Use kidney function based contrast dosing:
 - Confirm kidney function based contrast thresholds in the pre procedure “time out”
2. Monitor contrast volume in all cases:
 - Routine feedback to the lab personnel on contrast volume used in each case
3. In high risk patient:
 - Use biplane, avoid LV gram/aortography
 - Consider DyeVert in intermediate and high risk patients
 - Stage procedures when appropriate



Why I like the DyeVert System

1. Reduces contrast reflux without impacting procedural quality
2. Fits in seamlessly with the catheterization laboratory flow
3. No down side, reduces contrast dose and prevents contrast waste without excessive radiation or increasing procedural complexity
4. Sensitizes the catheterization lab staff on the need to minimize contrast volume with real time feedback

DYEVERT[™]
Contrast Reduction System **PLUS**





DyeVert Randomized Study

Primary outcomes – dye reduction and image quality

- 96 patients undergoing coronary angiography randomized to control angiography or use of the DyeVert
- Dye reduction and image quality

	Control		DyeVert		P-value*	% Reduction
	N	Contrast Volume (ml)	N	Contrast Volume (ml)		
As Treated	48	62.5±12.7	47 [#]	38.0±13.1	<0.001	39.2
Per Protocol	48	62.5±12.7	46 [^]	36.9±10.9	<0.001	40.9

No loss of clinical image quality!

Steffen Desch, MD TCT 2016
University Heart Centre Lübeck, University Hospital Schleswig-Holstein, Lübeck, Germany

Company overview

Osprey's positive share price momentum is supported by strong sales growth and reflective of its exciting pipeline of future customers

Financial information

Share price (8-May-17)	A\$0.425
52 week low / high	A\$0.20 / A\$0.50
Number of shares (m)	257.9
Market capitalisation	A\$109.6m
Cash (31-Mar-17)	US\$18.2m / A\$24.3m
Debt (31-Mar-17)	No debt
Enterprise value	A\$85.3m

Note: Assumes AUDUSD exchange rate of 0.75

Top shareholders

	CDIs	%
Brandon Capital Partners	60.5m	23.5%
Talu Ventures	34.0m	13.2%
Kinetic Investment Partners	25.3m	9.8%

Note: Grey shading represents substantial holdings associated with Osprey Board members, Chris Nave and Andy Jane

Share price performance



Key drivers of shareholder value

Osprey remains firmly focused on sales to drive shareholder returns

SALES GROWTH

Grow sales team and territories

- **Ongoing quarter on quarter sales growth is expected** with a growing sales team and increasing traction set to drive commercial success
- Expansion into Europe expected in late 2017

R&D

Development of R&D portfolio

- Power injector compatible DyeVert in development
- Working with key Physicians on specially designed DyeVert Plus that will be optimized for Chronic Total Occlusions and STEMI

PODIUM

Scientific presentations

- Two podium presentations on DyeVert Plus at the **Cardio Renal Connections conference in April 2017**
- DyeVert and DyeVert Plus to be presented at three podium presentations at the **SCAI Conference in May 2017**

ECONOMICS

Capitalize on new legislation

- Capitalize on the shift of hospital/physician payments based on “procedure volume” to “improving quality”
- **Take advantage of mandatory dye savings guidelines**

Thank you



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AVERT™ and DyeVert™ Systems Regulatory Status: Europe – CE Mark obtained; Australia – TGA approval obtained; United States – 510(k) cleared.