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**BAXTER HIGHLIGHTS DATA AT ISPOR EUROPE 2018 ON CLINICAL AND ECONOMIC BENEFITS WHEN ADDRESSING MALNUTRITION, INTRAOPERATIVE BLEEDING**

*Studies examine cancer-related malnutrition and nutrition management in pre-term babies, as well as the use of hemostats in specific pancreatic and spinal surgeries*

**BARCELONA, SPAIN, NOVEMBER 13, 2018** – Baxter International Inc. (NYSE:BAX), a leading global medical products company, is presenting four health economics and outcomes research (HEOR) analyses this week at the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Europe 2018 meeting. The studies evaluated potential clinical and economic impacts of various products and practices associated with malnutrition and surgical procedures.

“Advancing the science and understanding of issues facing patients and hospitals worldwide is a priority for Baxter,” said Dheerendra Kommala, M.D., vice president of Medical Affairs at Baxter. “The findings shared this week provide real-world evidence for how clinicians may help improve clinical outcomes while increasing hospital efficiency.”

**Malnutrition in Cancer Patients**

Malnutrition occurs in roughly 40 to 60 percent of cancer patients worldwide<sup>1,2</sup> and is a frequent complication that negatively impacts outcomes for patients<sup>3</sup> – including possible loss of skeletal muscle and increased risk of physical impairment, surgical complications, treatment toxicity and shorter survival.<sup>3</sup> In fact, it’s estimated that one out of four cancer patients die from malnutrition rather than tumor progression.<sup>1</sup> An analysis of real-world data from three retrospective, observational studies of administrative healthcare databases in France, Germany and Italy suggests that early

screening, diagnosis and treatment of malnutrition is associated with improvement in cancer patients' clinical outcomes as well as reduction of healthcare resources use and hospital costs.<sup>4</sup> ([PCN327, November 2018, ISPOR Europe 2018, Barcelona, Spain](#))

### **Parenteral Nutrition in Preterm Infants**

Globally, approximately 15 million babies (or 1 in 10 births) are born preterm every year.<sup>5</sup> Prematurity is the leading cause of death among newborns,<sup>6</sup> and low birth weight puts surviving preterm infants at risk for serious complications.<sup>7</sup> Researchers performed a cost-consequence analysis that used a deterministic model with inputs from an existing budget impact model. The findings suggest using a standardized, triple-chamber bag (3CB) system for parenteral nutrition – that includes protein, carbohydrates, lipids and electrolytes – to treat the majority of preterm babies would substantially reduce the risk of blood stream infections, compounding errors, and resource burden.<sup>8</sup> When looking at cases across Germany, France and Italy, the model concluded that a 10 percent increase in the use of a 3CB system could result in a two percent reduction in blood stream infections, a 10 percent reduction in compounding errors and a combined 9.6 million euros of hospital budget impact across all three countries.<sup>8</sup> ([PIH24, November 2018, ISPOR Europe 2018, Barcelona, Spain](#))

### **Hemopatch in Pancreatic Surgeries**

A pancreaticoduodenectomy – when the head of the pancreas, a portion of the small intestine, the gall bladder and the bile duct are surgically removed – is the most common procedure to treat pancreatic cancer, with postoperative pancreatic fistula (POPF) the most common major and potentially life-threatening complication. A retrospective observational analysis of 26 consecutive pancreaticoduodenectomies at a hospital in Spain suggested hemostatic-sealant **Hemopatch** might be an effective and cost-beneficial additional treatment compared to the Standard of Care (SoC) alone. The analysis concluded that the use of **Hemopatch** was associated with a reduction in complications (POPF by 23.1 percent, biliary fistula by 7.7 percent and hemorrhages by 7.7 percent), as well as a shorter hospital stay (a mean of 4.8 days in this study) and fewer healthcare costs (an

estimated \$10,676 or 23 percent in savings per patient).<sup>9</sup> ([PGI18, November 2018, ISPOR Europe 2018, Barcelona, Spain](#))

### **Floseal in Spinal Surgeries**

A study of retrospective data on 15,105 propensity-matched pairs of spinal surgeries from a large U.S. hospital billing database found cases with charges for **Floseal**, as the sole topical adjunctive hemostat used, were associated with fewer blood transfusions, lower blood-related complications, shorter hospital stays, and shorter surgical procedures than cases with charges for **Floseal** and other topical hemostats (gelatin sponges and thrombin).<sup>10</sup> Researchers then developed a cost consequence model to calculate the potential cost savings associated with the improved clinical outcomes and lower resource use observed in the first study for **Floseal**-only cases. The model concluded that the decreased use of resources, including shorter hospital stays and lower overall topical adjunctive hemostat use, could potentially save mid-volume U.S. hospitals \$2,445 per spinal procedure.<sup>11</sup> The results were [published](#) in September in the *Journal of Medical Economics*. ([PMD67, November 2018, ISPOR Europe 2018, Barcelona, Spain](#))

Attendees at ISPOR Europe 2018 can visit each of Baxter's poster sessions to learn more about the data.

### **About Baxter**

Every day, millions of patients and caregivers rely on Baxter's leading portfolio of critical care, nutrition, renal, hospital and surgical products. For more than 85 years, we've been operating at the critical intersection where innovations that save and sustain lives meet the healthcare providers that make it happen. With products, technologies and therapies available in more than 100 countries, Baxter's employees worldwide are now building upon the company's rich heritage of medical breakthroughs to advance the next generation of transformative healthcare innovations. To learn more, visit [www.baxter.com](http://www.baxter.com) and follow us on [Twitter](#), [LinkedIn](#) and [Facebook](#).

### **Important Safety Information**

**Hemopatch** is intended as a hemostatic device and surgical sealant for procedures in

which control of bleeding or leakage of other body fluids or air by conventional surgical techniques is either ineffective or impractical. **Hemopatch** may be used to close dural defects following traumatic injury, excision, retraction or shrinkage of the dura mater.

### **Important Risk Information for Hemopatch**

Do not compress **Hemopatch** into blood vessels or use intravascularly.

The device must not be used in patients with known hypersensitivity to bovine proteins or brilliant blue.

**Hemopatch** is not intended to be used in pulsatile, severe bleedings.

The use of **Hemopatch** is not recommended in the presence of an active infection.

When used in, around, or in proximity to foramina in bone, areas of bony confine, the spinal cord, the brain and/or cranial nerves, care should be exercised to avoid overpacking, creating the potential for neural damage.

**Hemopatch** is not intended as a substitute for meticulous surgical technique and the proper application of ligatures or other conventional procedures for hemostasis and sealing.

### **About Floseal**

#### **Important Safety Information**

**Floseal** Matrix is indicated in surgical procedures (other than ophthalmic) as an adjunct to hemostasis when control of bleeding by ligature or convention procedure is ineffective or impractical.

#### **Important Risk Information for Floseal Matrix**

Do not inject or compress **Floseal** Matrix into blood vessels. Do not apply **Floseal** Matrix in the absence of active blood flow, e.g., while the vessel is clamped or bypassed, as extensive intravascular clotting and even death may result.

Do not use **Floseal** Matrix in patients with known allergies to materials of bovine origin. Do not use **Floseal** Matrix in the closure of skin incisions because it may interfere with the healing of the skin edges.

**Floseal** Matrix contains Thrombin made from human plasma. It may carry a risk of transmitting infectious agents, e.g., viruses, and theoretically, the Creutzfeldt-Jakob disease (CJD) agent.

**Floseal** Matrix is not intended as a substitute for meticulous surgical technique and the proper application of ligatures or other conventional procedures for hemostasis.

Excess **Floseal** Matrix (material not incorporated in the hemostatic clot) should always be removed by gentle irrigation from the site of application. **Floseal** Matrix swells by approximately 10% to 20% after product is applied. Maximum swell volume is achieved within about 10 minutes.

The safety and effectiveness of **Floseal** Matrix has not been established in children under 2 years of age and pregnant women.

Do not use air to remove residual **Floseal** Matrix from Applicator tip. The Applicator tips should not be cut. Do not use **Floseal** Matrix on bone surfaces where adhesives, such as methylmethacrylate or other acrylic adhesives, will be required to attach a prosthetic device.

**Rx Only.** For safe and proper use of this device, refer to the full Instructions for Use.

*This release includes forward-looking statements concerning **Hemopatch** and **Floseal**, including potential benefits associated with their use. The statements are based on assumptions about many important factors, including the following, which could cause actual results to differ materially from those in the forward-looking statements: satisfaction of regulatory and other requirements; actions of regulatory bodies and other governmental authorities; product quality, manufacturing or supply, or patient safety issues; changes in law and regulations; and other risks identified in Baxter's most recent filing on Form 10-K and other SEC filings, all of which are available on Baxter's website. Baxter does not undertake to update its forward-looking statements.*

Baxter, **Hemopatch** and **Floseal** are registered trademarks of Baxter International Inc.

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<sup>1</sup> Hébuterne, X. et.al 2014. Prevalence of MN and current use of nutrition support in patients with cancer. Journal of Parenteral and Enteral Nutrition, 38(2), 196-204

<sup>2</sup> Arends, J. et.al 2017. ESPEN expert group recommendations for action against cancer-related MN. CN, 36(5), 1187-1196

<sup>3</sup> Virizuela, J. A. et.al 2018. Nutritional support and parenteral nutrition in cancer patients: an expert consensus report. Clinical & Translational Oncology, 20(5), 619-629

<sup>4</sup> Challenges and opportunities in clinical nutrition in oncology: available evidence, real-word practices, and the way forward. Goldwasser F, Piaggio T, Lucas J, Zalcmán G, Tilleul P, Schiefke I, Marschal O, Pedrazzoli P, Caccialanza R. <https://tools.ispor.org/ScientificPresentationsDatabase/Presentation/84243?pdfid=58699>

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<sup>5</sup> Althabe F, Howson CP, Kinney M, Lawn J, World Health Organization. Born too soon: the global action report on preterm birth. 2012. Available from: [www.who.int/pmnch/media/news/2012/201204\\_borntoosoon-report.pdf](http://www.who.int/pmnch/media/news/2012/201204_borntoosoon-report.pdf)

<sup>6</sup> March of Dimes, PMNCH, Save the Children, WHO. Born Too Soon: The Global Action Report on Preterm Birth. Eds CPHowson, MV Kinney, JE Lawn. World Health Organization. Geneva, 2012

<sup>7</sup> GBD 2015 Child Mortality Collaborators, and others. Global, regional, national, and selected subnational levels of stillbirths, neonatal, infant, and under-5 mortality, 1980–2015: a systematic analysis for the Global Burden of Disease Study 2015. 2016. The Lancet, 388 (10053): 1725–1774

<sup>8</sup> Modelled effects of a pediatric triple-chamber-bag (3CB) system on payer costs and clinical outcomes in pre-term neonates across France, Germany and Italy. Alexander Kriz, Alberto Migliore, Antony Wright, Tomaso Piaggio. <https://tools.ispor.org/ScientificPresentationsDatabase/Presentation/87975?pdfid=56247>

<sup>9</sup> Use of peg-coated collagen hemostatic sealant (HS) in pancreatoduodenectomy (PD) surgery: incidence of postoperative pancreatic fistula (POPF) and cost-benefit analysis in a retrospective study. Ramirez MG, Serradilla Mario, Ramirez Manuel A. <https://tools.ispor.org/ScientificPresentationsDatabase/Presentation/85079?pdfid=57401>

<sup>10</sup> Manuel G. Ramirez, Harel Deutsch, Nitin Khanna, Donald Cheatem, Dongyan Yang & Erik Kuntze (2018) Floseal only versus in combination in spine surgery: a comparative, retrospective hospital database evaluation of clinical and healthcare resource outcomes, Hospital Practice, DOI: 10.1080/21548331.2018.1498279

<sup>11</sup> Cost–consequence analysis of a hemostatic matrix alone or in combination for spine surgery patients. Manuel G. Ramirez, Xiaoli Niu, Josh Epstein & Dongyan Yang. Received 10 Jul 2017, Accepted 13 Aug 2018, Accepted author version posted online: 16 Aug 2018, Published online: 30 Aug 2018. <https://doi.org/10.1080/13696998.2018.1513261>