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Media Contact:

Jill Carey-Hargrave
(224) 948-5353
media@baxter.com

Investor Contact:

Clare Trachtman
(224) 948-3085

**NEW DATA SHOW MALNUTRITION IN U.S. HOSPITALS
ASSOCIATED WITH A \$42 BILLION BURDEN TO HEALTH SYSTEM**

- New AHRQ statistical brief, co-authored with BAXTER and ASPEN, show nearly 2 million U.S. hospital stays¹ involve malnutrition
- Malnutrition-related hospital stays have up to a five times higher risk of deaths², compared to patient stays not identified as malnourished
- Most malnourished-related hospital stays were two times longer¹ than for patient stays not identified as malnourished

DEERFIELD, Ill., Oct. 13, 2016 — Baxter International Inc. (NYSE: BAX), a global leader in PN therapy, partnered with the American Society for Parenteral and Enteral Nutrition (ASPEN) and the Agency for Healthcare Research and Quality (AHRQ) to co-author a new statistical brief – “[Characteristics of Hospital Stays Involving Malnutrition, 2013](#)” – about the often overlooked consequences of disease-related malnutrition.

The new statistical data characterizes the impact of malnutrition in U.S. hospitalized patients in human and economic costs – concluding malnutrition is associated with up to five times higher risk of in-hospital deaths, may result in two times longer hospital stays, and creates an estimated \$42 billion¹ burden to the healthcare system.

“I believe the fundamental reason malnutrition is underdiagnosed and undertreated is that we lack objective, measurable means to diagnose the condition,” said Paul Wischmeyer, M.D., E.D.I.C., Department of Anesthesiology and Duke Clinical Research Institute, Duke University Medical Center. “I teach that nutrition assessment has to occur in every patient, and at-risk patients should be started on thoughtful nutrition therapy within 48 hours.”

Malnutrition is characterized by a lack of adequate calories, protein, or other nutrients needed for tissue maintenance and repair,³ an important element of recovery. With the exception of post-surgical patients, fewer than 7 percent of the nearly 2 million U.S. hospitalized patients identified as malnourished received enteral or parenteral nutrition. Parenteral nutrition (PN) is an intravenous (IV) therapy, which may include a balance of protein, carbohydrates,

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lipids (fats), electrolytes, vitamins and trace elements for patients who cannot ingest food orally or enterally (tube-fed).

The statistical brief is the outcome of a comprehensive evaluation of the AHRQ Healthcare Cost and Utilization (HCUP) database, the nation's most comprehensive source of hospital data, including information on inpatient care, ambulatory care and emergency department visits. The statistics are national estimates on the characteristics of malnutrition reported during non-maternal and non-neonatal hospital inpatient stays.

"The often overlooked consequences of disease-related malnutrition are significant from a human and healthcare cost perspective; and while the study only looked at U.S. statistics, this is a global concern," said Mary Hise Brown, PhD, RDN, CNSC, senior medical director, Baxter, and co-author of the AHRQ statistical brief. "To advance patient care, it's critical that all aspects of the public and private healthcare industry work together to increase awareness about the need to better assess hospitalized patients for malnutrition and how to provide the best nutritional therapy for their condition."

Both Baxter and ASPEN are committed to raising awareness about the consequences of disease-related malnutrition and the importance of early diagnosis and treatment. Healthcare providers can learn more at [Baxter's Nutrition Academy](#) online, which provides practical guidance on how and when to implement parenteral nutrition, to help make it accessible to more patients with nutritional deficits. ASPEN also offers a comprehensive [Malnutrition Solutions Center](#) online for healthcare providers, patients and caregivers to learn about how to recognize and manage disease-related malnutrition.

About Baxter's Nutrition Business

Baxter has been assisting clinicians in treating patients' diverse nutrient needs since the 1940s, when the company first introduced liquid proteins in the form of amino acids. Since then, Baxter has continued to advance PN therapy. As an example, Baxter pioneered the world's first "triple-chamber system" internationally for IV nutrition, which provides many of the essential ingredients of balanced nutrition – protein, carbohydrates, lipids and electrolytes in a single container – simplifying the preparation of PN for patients. Today, Baxter provides one of the broadest PN portfolios globally, which includes premix IV solutions, vitamins and lipids, as well as pharmacy workflow management, labeling and compounding technology.

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About Baxter

Baxter provides a broad portfolio of essential renal and hospital products, including home, acute and in-center dialysis; sterile IV solutions; infusion systems and devices; parenteral nutrition; biosurgery products and anesthetics; and pharmacy automation, software and services. The company's global footprint and the critical nature of its products and services play a key role in expanding access to healthcare in emerging and developed countries. Baxter's employees worldwide are building upon the company's rich heritage of medical breakthroughs to advance the next generation of healthcare innovations that enable patient care.

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¹ Weiss AJ, et al. Characteristics of Hospital Stays Involving Malnutrition, 2013. HCUP Statistical Brief #210.

² Ibid.

³ White JV, Guenter P, Jensen G, Malone A, Schofield M, Academy Malnutrition Work Group, et al. Consensus statement: Academy of Nutrition and Dietetics and American Society for Parenteral and Enteral Nutrition: characteristics recommended for the identification and documentation of adult malnutrition (undernutrition). *Journal of Parenteral and Enteral Nutrition*. 2012;36(3):275-83.