

## Frost & Sullivan Recognizes Covidien for Its CT Contrast Delivery System with RFID Enabled Intelligence

MOUNTAIN VIEW, Calif. — March 11, 2009 — Based on its recent analysis of the radio-frequency identification (RFID) based biological delivery systems market, Frost & Sullivan recognizes Covidien with the 2008 North American Frost & Sullivan Product Innovation Award for developing a contrast delivery system with RFID technology. Covidien's contrast delivery system combines its unit-dose RFID enabled Ultraject™ prefilled contrast media syringes with its RFID enabled Optivantage™ dual head contrast delivery system to create a unique platform for contrast media administration in computed tomography (CT) imaging procedures.

Precise administration of contrast imaging agents to the patient is critical in radiology to help enhance the accuracy and efficiency of results obtained through the imaging process. The IMV Medical Information Division estimates that since 2003, there has been a 37 percent increase in the practice of CT, the key process that requires administration of contrast media; this is largely due to increase in the number of CT scanners. The 2005 USP MEDMARX® report raised awareness of medication errors in radiology services (cardiac catheterization, radiology and nuclear medicine), which was more than six times higher compared to the general data set. In view of the alarming risk statistics, the challenge has been to develop an effective solution that would help enhance the accuracy of contrast agent administration and help in minimizing the risk, in effect.

"Covidien's innovative CT contrast delivery system with RFID enabled intelligence helps safeguard against certain life threatening medication errors," says Frost & Sullivan Research Analyst Bhuvaneashwar Subramanian. "The combined use of the RFID enabled Ultraject™ prefilled syringes with the RFID enabled Optivantage™ contrast delivery system prevents an accidental air embolism caused from using an empty used syringe as well as accidental patient cross-contamination from using a partially used syringe in another patient exam."

The system essentially creates an interface between the contrast media syringe and the power injector that allows radiology technologists to ensure that patients receive the precise dosage of the drug during the procedure. The interface allows the injector to physically alter the RFID label on the syringe. This unique feature helps avert the possibility of erroneous administration. Apart from serving purely as an injection application, the interface determines if the drug being administered is beyond its expiration date.

"Moreover, the system transmits the drug and administration protocol information to a printed label for patient records," notes Subramanian. "This enhances the efficiency of data storage and minimizes the cost and effort toward record maintenance while increasing the accuracy of the data stored."

While developing the technology, Covidien has partnered extensively with Texas Instruments for procuring RFID inlays, and with CCL Label for label creation. The technology has been a recipient of several technological patents and was recently granted clearance by the FDA. From a safety and regulatory perspective, the system has been deemed consistent with the Joint Commission Medication Management Standards and National Patient Safety Goals and is well within the safety ranges prescribed for wireless and RFID applications prescribed by a study in the Journal of the American Medical Association.

Covidien has earned top billing as a global healthcare company and as a leading manufacturer for medical devices, diagnostic imaging agents, pharmaceuticals products and medical supplies. Further, the company has launched the Partnership for Neighborhood Wellness, providing financial help and employee expertise to communities in need. It is also an active collaborator

with organizations such as the National Association of Community Health Centers, the North American Society for the Study of Obesity, and Project HOPE, whose broad aim lies in providing better health facilities to communities and making people healthcare literate.

In view of the company's impressive contrast media delivery system and the best practices that it has demonstrated, Frost & Sullivan is pleased to present Covidien with the 2008 North American Product Innovation Award in the field of RFID based biological delivery systems. Each year, Frost & Sullivan presents this award to the company that has demonstrated excellence in new products and technologies within its industry. The recipient company has shown innovation by launching a broad line of emerging products and technologies.

Frost & Sullivan's Best Practices Awards recognize companies in a variety of regional and global markets for demonstrating outstanding achievement and superior performance in areas such as leadership, technological innovation, customer service, and strategic product development. Industry analysts compare market participants and measure performance through in-depth interviews, analysis, and extensive secondary research in order to identify best practices in the industry.

### **About Covidien**

Covidien is a leading global healthcare products company that creates innovative medical solutions for better patient outcomes and delivers value through clinical leadership and excellence. Covidien manufactures, distributes and services a diverse range of industry-leading product lines in four segments: Medical Devices, Imaging Solutions, Pharmaceutical Products and Medical Supplies. With 2008 revenue of nearly \$10 billion, Covidien has more than 41,000 employees worldwide in 59 countries, and its products are sold in over 140 countries. Please visit [www.covidien.com](http://www.covidien.com) to learn more about our business.

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