

# Integrating the Back End of the Healthcare Supply Chain

BY RONALD PIERCE



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*First, Do No Harm.*

Dating back to Hippocrates, this mantra of medicine has been to “first, do no harm.” While clinical outcomes remain the mission of healthcare in the 21st century, “do no harm” has considerations beyond the patient.

Repercussions from healthcare delivery extend far beyond clinical settings, impacting communities and the environment. The voluminous consumption of disposable materials and the generation of waste is one example.

Healthcare is the largest industry in our economy. In 2007, total national health expenditures were \$2.3 trillion, \$7,600 per capita, representing 16.9 percent of gross domestic product (GDP). The National Coalition of Healthcare reports “experts agree that our healthcare system is riddled with inefficiencies, excessive administrative expenses, inflated prices, poor management, inappropriate care, waste and fraud.” The descriptors “inefficiencies,” “poor management,” and “waste” can all be applied to typical management of waste materials in healthcare facilities. Few facilities have developed integrated programs that effectively manage disposable materials to minimize internal (environment of care, employee/patient safety, regulatory risk, facility sustainability) and external (community/environmental) impact.

The majority of materials consumed in healthcare facilities become waste. U.S. healthcare facilities spend \$10 billion annually to dispose of waste materials, including solid, medical, HIPAA, pharmacy, pathology, chemotherapy, nuclear, chemical, electronic, construction and demolition

waste, among others. Waste materials create employee and patient safety exposure, regulatory compliance requirements, risk/liability and environmental concerns. The diversity of specialized waste regulations and vendors creates a complex and costly set of requirements for healthcare facilities. Failure to appropriately manage waste materials inflates operating expenses, safety exposure, environmental consequences, legal risk, monetary fines and negative public opinion.

## Healthcare Supply Chain Challenges

Healthcare facilities consume a myriad of materials, and without continued uninterrupted supply of such materials patient care and facility operations would cease. The spectrum of materials consumed in healthcare is vast, ranging from the most sophisticated (radioactive drugs) to the most basic (food).

For years, healthcare facilities have worked with industry partners to refine supply chain management. Significant supply chain advancements evolved to reduce operating cost, including product standardization, cost leveraging through group purchasing and logistics efficiencies maximized by integrated product distribution, including stockless purchasing and just-in-time delivery. Benefits include consolidating vendors, processes and

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materials handling requirements to maximize efficiency and reduce cost. The distribution industry has evolved to create cost-effective, efficient and seamless delivery of resource materials to healthcare facilities. However once on-site, there is no equivalent sophisticated “reverse distribution” model on the “back end” of the supply chain to appropriately manage the materials after consumption. The vast majority of the materials are simply deposited into a variety of waste streams.

According to Practice Greenhealth, U.S. hospitals generate 7,000 tons of waste every day. A survey of hospitals reports that approximately 80 percent of materials consumed in hospitals are classified as solid waste (trash), and that 71 percent of total waste volume is comprised of paper (including cardboard), plastics and metals, which are recyclable materials. Additionally, 19 percent of hospital waste is organic, which can be composted. Correspondingly, only 10 percent of waste generated at healthcare facilities is truly hazardous and can't be beneficially reused. Yet, few materials consumed by healthcare facilities are beneficially reused or recycled as most are deposited as waste in landfills. Comparatively, healthcare lags far behind other industries in addressing inefficient management and disposal of by-products of operations.

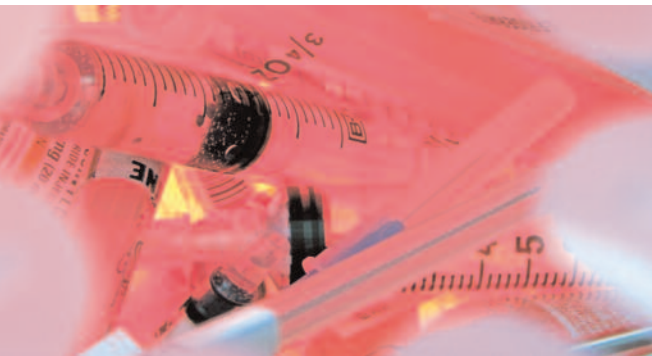
## “Post-Consumption Materials Management”

Healthcare facilities must manage the life cycle of materials from purchase and use to collection, transport and disposal, meeting complex and varying needs of patients, employees, state and federal regulatory agencies, communities and the environment. Notwithstanding serious negative consequences

resulting from mismanagement of waste materials, integrated waste solutions similar to programs established in other industries have not been widely implemented in healthcare.

The integration of the back end of the supply chain and the development of “post-consumption materials management” programs at healthcare facilities is an idea whose time has come. There is tremendous economic and environmental value in properly classifying, segregating and managing consumed materials. The cost of waste disposal and requirements for regulatory compliance varies significantly between waste categories, from as low as \$60 per ton for trash to as high as \$12,000 per ton for hazardous materials. Real opportunity lies in proper waste classification and segregation. For example, the average cost of “red bag” medical waste (\$600/ton) is 10 times greater than the average cost of solid waste (\$60/ton) disposal. Industry analysis estimates that nearly half of the volume of waste deposited into red bags is in fact solid waste that does not meet the definition of regulated medical waste. With proper segregation, those materials can be diverted from red bags reducing cost, risk, liability and environmental impact.

The development of post-consumption materials management programs requires considering all waste streams as a single continuum of cost and complexity, including: hazardous, infectious, solid waste and recyclable materials. Materials can be effectively reclassified and managed from one waste category to another, from higher cost, higher risk, and higher environmental impact categories to lower cost, lower risk, and lower environmental impact categories. The opportunity for cost reduction through integrated waste management may be as high 40 to 70 percent,




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representing \$4 billion to \$7 billion for the healthcare industry. The difficulty resides in the fact that healthcare facilities contract with numerous specialty waste providers, each servicing a single waste stream (solid, medical, HIPAA, pharmacy, pathology, chemotherapy, nuclear, electronic, construction and demolition waste, etc.). As such, no one company is responsible for managing materials across the waste continuum, and none are provided incentives for reducing the volumes of the individual waste stream they directly service.

### Integrated Healthcare Waste Management Solution

The next evolution of supply chain management is a new model integrating post-consumption materials management under a single external partner with authority and capacity to manage all waste and recycling requirements. The integrated solution enables control of the chain of custody from point of generation within the healthcare facility through collection and transport to the ultimate destination in a recycling facility, landfill, waste-to-energy co-generation facility or composting site. All materials are managed to their lowest impact category. The

challenge is identifying an external partner capable of managing the breadth of materials across the entire chain of custody.

At the forefront of this evolution are companies like WM Healthcare Solutions (WMHS). WMHS is the newly created healthcare division of parent company Waste Management, the industry leader in waste, recycling, waste-to-energy, landfill management and integrated industrial environmental solutions. WM previously established the integrated waste solution model in manufacturing industries, generating millions of dollars in documented cost savings. WMHS is a process integrator and consultative management company, leveraging Waste Management’s enormous service infrastructure and managing third-party contract companies. WMHS conducts comprehensive on-site hospital financial and operational assessments to identify opportunities to reduce cost, risk, liability and environmental impact, and is capable of managing all waste requirements for healthcare facilities with a single contract, point of contact and invoice. WMHS is currently piloting a number of innovative waste management models with hospitals, including “at risk” contracts to provide all waste services for a predictable fixed monthly fee. 

Ron Pierce is a senior executive who has been working with healthcare providers and facilities for 27 years developing next generation business models. He currently serves as Vice President, WM Healthcare Solutions and general manager of the newly created Healthcare Solutions division of Waste Management, Inc., North America’s leading environmental solutions company.

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