



SALINA REGIONAL HEALTH CENTER

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Company background

Salina Regional Health Center, or SRHC, is a medical services provider with more than 1,200 employees. It offers around-the-clock emergency care, primary care, surgical services and various specialty services. While its main campus is in Salina, Kansas, SRHC serves all of North Central Kansas through its 21 affiliated clinics located in surrounding communities.



Project background

Salina Regional Health Center partnered with the K-State Pollution Prevention Institute, or PPI, to host a Sustainable Materials Management, or SMM, intern. The SMM intern's goal was to investigate waste reduction and diversion projects. Under SRHC's direction, the intern identified and assessed six relevant projects emphasizing the reduction, reuse or recycling of materials. If put into action, the identified projects could help SRHC cut down on its landfilled waste, environmental emissions, and save on material purchasing and disposal costs.

Incentives to change

SRHC's goal is to improve the health of its patients and the communities it serves. To this end, SRHC requested the intern focus on projects that could reduce the amount of waste being generated from all areas of the facility and to find alternative disposal methods for many of its wastes. Achieving these goals can lessen SRHC's upstream and downstream greenhouse gas emissions and boost its financial sustainability, thereby enabling the organization to better fulfill its mission — to aid its patients and their communities.

PROJECTS REVIEWED FOR SMM POTENTIAL

Regulated medical waste containers

Used sharps and materials contaminated with blood are disposed of as regulated medical waste, which is collected and processed by an approved disposal contractor. Salina Regional Health Center's used sharps containers are single use, generating six tons of waste per year at an annual cost of \$31,040 in replacement purchases and \$3,510 in disposal fees. Switching to a reusable sharps container program would eliminate this waste stream and save SRHC \$27,550 annually. Additionally, the intern observed that the majority of SRHC's medical waste is not truly regulated medical waste. By implementing best management practices to reduce contamination, the intern conservatively estimated that SRHC could divert 7.5% of total regulated medical waste to its municipal solid waste stream, saving \$1,300 per year in disposal fees.

Blue sterile wrap waste

SRHC uses three types of FDA-cleared product to package surgical instruments for autoclaving – sterilization pouches, blue wrap, and sterilization containers. The first

two items are single use and are disposed of as municipal solid waste. The intern estimated the facility generates 3.9 tons of blue wrap waste per year at a cost of \$30,980 in replacement purchases and \$175 in disposal fees. The intern identified a recycling option that could take the entire waste stream for \$3,015 per year, an increase of \$2,840 in disposal costs. As an alternative, the intern recommended purchasing more reusable sterilization containers, though more research is needed to determine potential savings.

Paper tray liners

SRHC's kitchen offers breakfast, lunch, and dinner to patients via a room service model and a cafeteria model. Each tray of food sent for room service comes with a paper tray liner to enhance tray aesthetics. Each used liner is disposed of as municipal solid waste, resulting in 2.3 tons of paper waste annually at a cost of \$6,170 in purchasing and \$105 in disposal per year. The intern recommended SRHC stop using tray liners to eliminate this waste stream and save \$6,275 per year.

PROJECTS REVIEWED FOR SMM POTENTIAL, CONTINUED

Disposable suction canisters

Suction canisters are used to temporarily store bodily fluids and secretions. Canister contents containing blood are first solidified and then disposed of as regulated medical waste; blood-free contents are discharged to the facility's sanitation system. In both cases, the canisters are managed as regulated medical waste. SRHC's operating room and ICU use about 3,620 single-use canisters per year total, resulting in nearly 1.2 tons of waste based on container weight alone. Annual purchasing and disposal costs are \$5,490 and \$670, respectively. The intern identified several durable container options, but these require the use of single-use liners and solidifiers that prevent discharge of contents to the sanitation system, potentially increasing total regulated medical waste. More research is needed to analyze durable canister feasibility due to impacts on disposal methods.

Disposable blood pressure cuffs

SRHC currently uses disposable blood pressure cuffs that result in 0.75 tons of waste per year, costing \$15,540 and \$34 in purchasing and disposal costs, respectively. The

intern recommended replacing the disposable cuffs with durable versions, which could reduce SRHC's yearly waste by 0.72 tons and save \$13,090 per year in disposal and purchasing costs.

Cafeteria and kitchen waste reduction

The intern performed two audits to estimate yearly waste generation rates from SRHC's kitchen, cafeteria, and room service. These estimates suggest SRHC's food system generates nearly 133 tons of waste annually, more than half of which is from organics, at a disposal cost of nearly \$6,000. This waste accounts for nearly a third of SRHC's total annual municipal solid waste. The intern recommended a variety of actions, such as changing default dishware from single-use to durable, tracking kitchen waste, and donating excess food. The intern conservatively estimated that these actions could reduce SRHC's annual waste by 19.45 tons, saving \$16,070 in disposal fees and food costs.

SUMMARY OF 2023 SMM INTERN RECOMMENDATIONS

Project	Annual estimated environmental impact	Estimated cost savings (\$/year)	Status
Regulated medical waste containers	6.05 tons of waste reduced 14.47 MTCO ₂ e reduced	\$28,850	Recommended
Blue sterile wrap waste	3.88 tons of waste recycled 3.15 MTCO ₂ e reduced	\$2,840	More research needed
Paper tray liners	2.33 tons of waste reduced 14.16 MTCO ₂ e reduced	\$6,275	Recommended
Disposable suction canisters	Unknown	Unknown	More research needed
Disposable blood pressure cuffs	0.72 tons of waste reduced 1.35 MTCO ₂ e reduced	\$13,090	Recommended
Cafeteria and kitchen waste reduction	19.45 tons of waste reduced 72.26 MTCO ₂ e reduced	\$16,070	Recommended
Total¹	28.54 tons of waste reduced	\$64,285	
GHG reductions^{1,2}	102.24 metric tons CO₂ equivalent		

¹Does not include projects "not recommended" or where "more research needed."

²EPA P2 GHG Calculator with Cost, 7 April 2016 and EPA WARM Tool- Version 14, Mar. 13, 2018