

# Closing the Loop with Circular Blu

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**CIRCULAR BLU™**

Redefining the Value of Waste

# Who We Are...

Circular Blu

# Circular Blu



Circular Blu is a consulting and manufacturing firm, dedicated to circular economy solutions to problematic waste streams.



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Circular Blu works with the healthcare and business sectors to divert materials from landfill and redefine the value of waste by creating sustainable circular economy products.



## Services

- Waste Stream Consulting and Programming
- Circular Economy Consulting

## Products

- Upcycled Products
- Downcycled Rigid Products
- Downcycled Flexible Products

## Partners

- Sustainable Solutions
- PLASTICS
- Work Without Limits
- Vizient

# Our Focus

## Hospital Plastics and Circular Products



New innovative processes  
created over industry best  
practices.



Professional consultancy services  
from industry experts.



Local and national solutions to  
address sterilization wrap  
recycling.



# Intro to Circular Products

How Circular Blu is Changing Healthcare Purchasing

# Closed Loop Process

- 1) Pick up material from healthcare facility
- 2) Divert material from landfill
- 3) Aggregate supply
- 4) Transport material to manufacturing/processing facilities
- 5) Convert material into recycled bags
- 6) Sell circular products back to healthcare facility.

## Conventional waste model



## Circular Blu waste model



## Post Consumer Repurposed Stream



## Post Consumer Recycled Stream

## Making Circular Products from Waste



# Healthier Products

- Convert single use bags
- Working to convert other unhealthy products
- 100% recyclable drapes with On the Right Track
- Create circular PP repurposing programs





# EPP and Environmental Attributes

## EPP Attributes:

- 100% PCR Content
- 100% Recyclable Packaging
- 100% Recyclable Product
- Designed for Reuse
- Does not contain any harmful chemicals

## Environmental Attributes

- 90% Reduction in Energy Consumption
- 77% Reduction in Contribution to Global Warming
- 62% Reduction in Smog Creation
- 51% Reduction in Water Use
- 44% Reduction in Eutrophication

# The World's Most Sustainable Tote

Made from upcycled sterilization wrap collected from participating hospitals



# Products made from

**BlueCON Resin™**



Made from 80% blue wrap



45 gallon can w/wheels & Flip lid  
25 X L x 21 1/2 W X 31 1/2 H - 9.75 lbs.



32 gallon Garbage Can  
22" Diameter x 28" H - 7 lbs.



28 quart Recycling Bin  
14 1/2 D x 10 1/2 W x 15 1/2 H - 2 lbs.



15 gallon Distribution Tote - w/hinged lid  
11D x 23 W x 15 H - 4.5 lbs.



Fractured Bed pan



Stackable Bed pan



Wash Basin



Pontoon Bed pan



Disposable Surgical Scrubs



Nonwoven Fabric made from 100% recycled blue wrap

# Case 1: Dartmouth-Hitchcock Closes the Loop



## Dartmouth-Hitchcock Medical Center Wrap Collection Program



### Diverted close to 3 tons of wrap

Circular Blu works with DHMC to collect sterilization wrap. Material is sorted into pieces big enough to make tote bags and the rest is downcycled.



### Bags made from DHMC wrap

The bags you are holding are made from DHMC's wrap. Circular Blu has collected enough wrap to make over 5,000 bags.



### Closing the loop

DHMC has committed to buying back products made from their wrap waste through Medline.

# Case 2: Valley Hospital Replaces Single Use Bags



CEO Audrey Meyers Converts Valley Health System's Disposable Patient Experience Bags to Reusable Circular Economy Bags



## 25k Reusable Patient Experience Bags

Made from Surplus Wrap diverted from landfill. Saved 21,540 kWh, over 16,000 of CO<sub>2</sub>, and 7,500 lbs of landfill space..



## Bags Communicate Sustainability

A survey was given to evaluate the effectiveness of these bags communicating sustainability initiatives. These bags received an average of 4 out of 5 in their effectiveness.



## More Hospitals Interested in Converting

There has been a sharp increase in demand for reusable alternatives to patient belonging bags.

# The Valley Hospital Sustainability Questionnaire

1 Year later, employees at The Valley were polled on two questions:

**Q1: On a scale 1-5, how effective are The Valley Hospital's new Patient Experience Bags at communicating sustainability?**

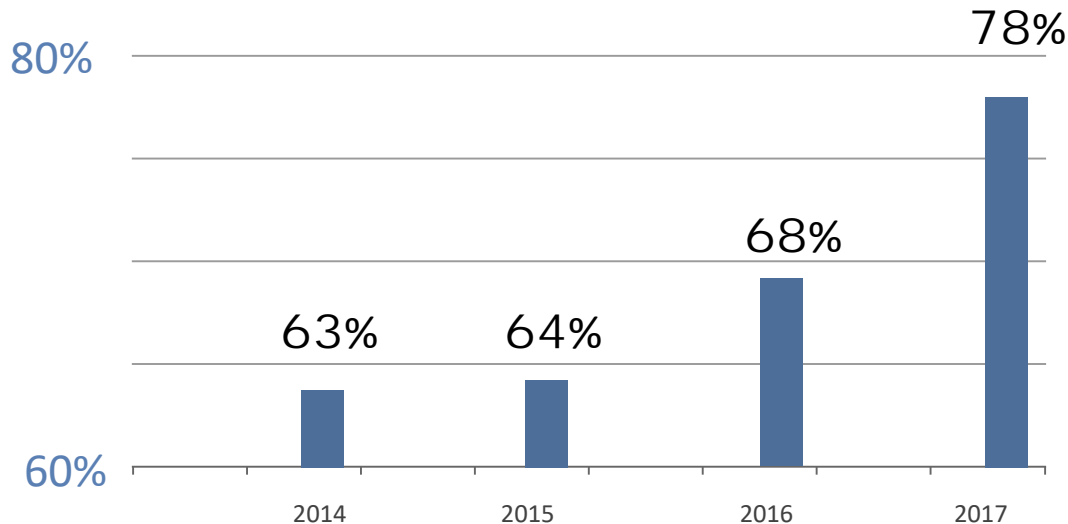
**Result: 4/5**

**Q2: On a scale of 1-5, how well is The Valley Hospital communicating its sustainability efforts and initiatives?**

**Result: 4/5**

# EPP Policy Adoption

## Year-Over-Year Comparison



Source: Practice Greenhealth

## Analysis

1

Healthcare leveraging spending power to increase sustainable product availability

2

Suppliers and GPOs need to respond with cost competitive EPP products

3

Sustainability and supply chain connections are being integrated

4

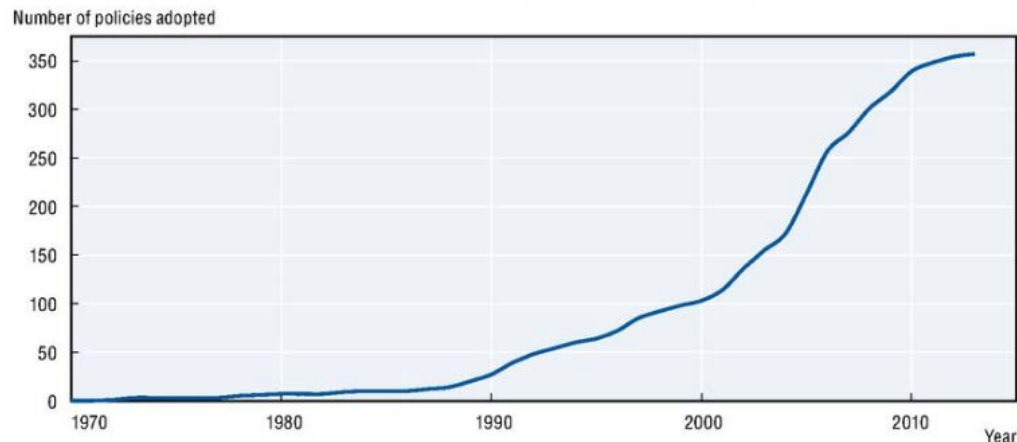
Healthcare leadership is driving change

# Extended Producer Responsibility (EPR)

EPR is a practice and policy approach in which producers are made responsible for collecting and processing their manufactured products upon the end of their lifetime.

- Many states in the US are passing EPR regulations.
- Nearly half of U.S. states now have some form of EPR policy.
- **Creating sterilization wrap recycling programs will help.**

Figure 1.2. **Cumulative EPR policy adoption globally, 1970-2015**



Source: OECD (2013), *What have we learned about extended producer responsibility in the past decade? – A survey of the recent EPR economic literature*, Paris



# Healthcare Circularity

Issues, Considerations and Solutions for Wrap Recycling in  
Healthcare

# Hospitals Need Medical Plastics Recycling



## **Waste Disposal costs are increasing**

MSW Tipping fees projected to increase greatly. This will increase sterilization wrap disposal expenses for hospitals without recycling programs.



## **Landfills are reaching capacity**

Landfills will reach capacity in less than 20 years. China banning import of recyclables will speed this up.



## **Tariffs are affecting domestic product creation**

Imported goods are becoming more expensive, allowing more price competitiveness for domestic products.



## **Interest in closed loop products is increasing**

Plastic waste is in national spotlight. Consumers are demanding sustainable products and products with PCR content.

# Landfill Capacities and Increased Fees



**Table 1: MSW tipping fees in 2017 with Forecast to 2021**

Region	2017	2018*	2019*	2020*	2021*	AAGR	5-Year total increase
Northeast	\$74.75	\$75.92	\$77.10	\$78.25	\$79.28	1.48%	6.06%
Southeast	\$40.36	\$40.87	\$41.37	\$41.85	\$42.32	1.19%	4.86%
Midwest	\$49.57	\$50.63	\$51.59	\$52.55	\$53.42	1.89%	7.77%
Western	\$35.69	\$36.58	\$37.47	\$38.27	\$39.06	2.28%	9.45%
Pacific	\$59.18	\$60.84	\$62.50	\$64.07	\$65.54	2.58%	10.73%
Entire US	\$50.30	\$51.19	\$52.06	\$52.84	\$53.53	1.57%	6.43%

**Table 2: Remaining Landfill Capacity in 2021 and Annual Rate of Capacity Loss**

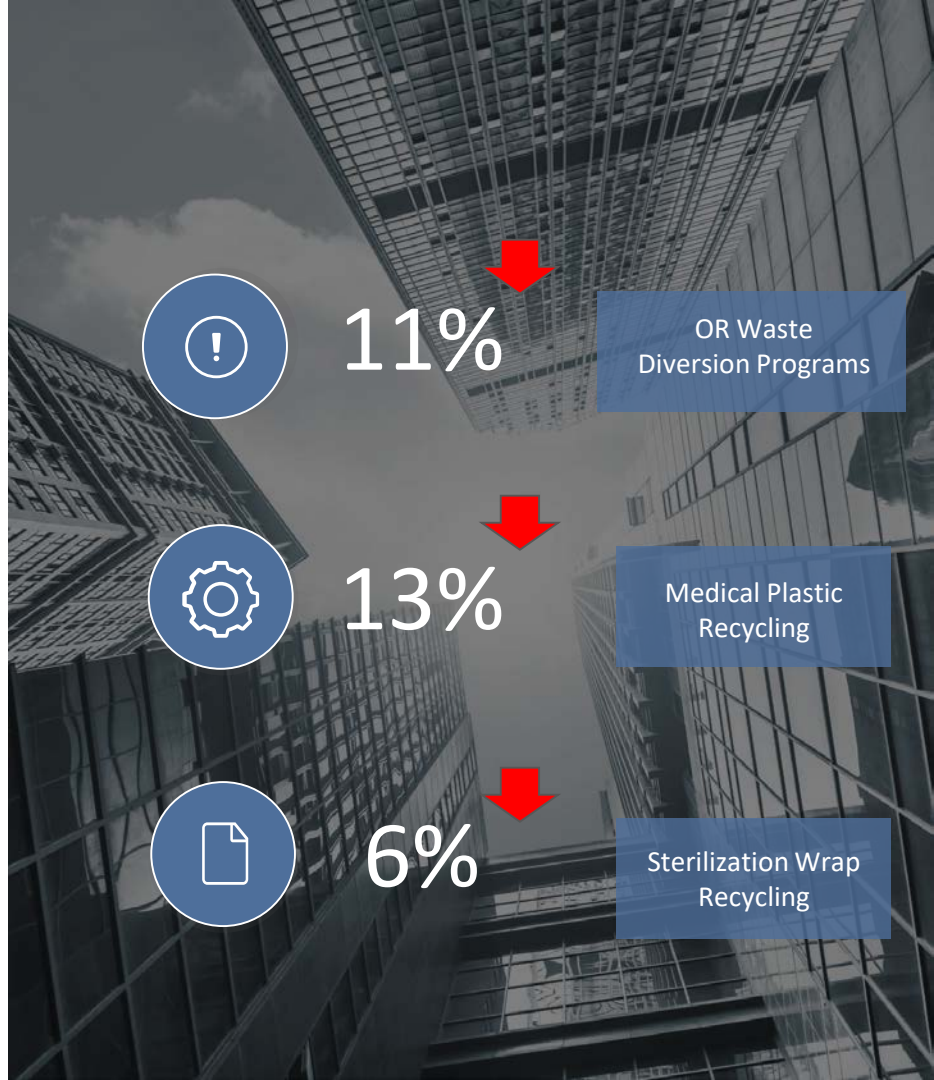
Region	Remaining Capacity (years)	Annual rate of loss
Northeast	8	-5.0%
Southeast	14	-2.5%
Midwest	11	-4.0%
Western	22	-1.5%
Pacific	17	-1.9%
USA	15	-2.6%

**\*\*These pricing forecasts do not incorporate China's material ban, which will accelerate price increase and capacity loss dramatically.\*\***

# Healthcare Recycling

## Picking up the slack

- **Issues with the recycling market are being seen throughout the sector.**
- **Waste haulers will not take sterilization wrap without a market to sell it.**
- **Little to no transparency with downstream supply chain.**
- **Sterilization wrap is undesirable due to lightweight and voluminous nature.**
- **Hospitals desire an end-of-life solution for sterilization wrap.**





From Problem



To Solution

# Our Comprehensive Solution

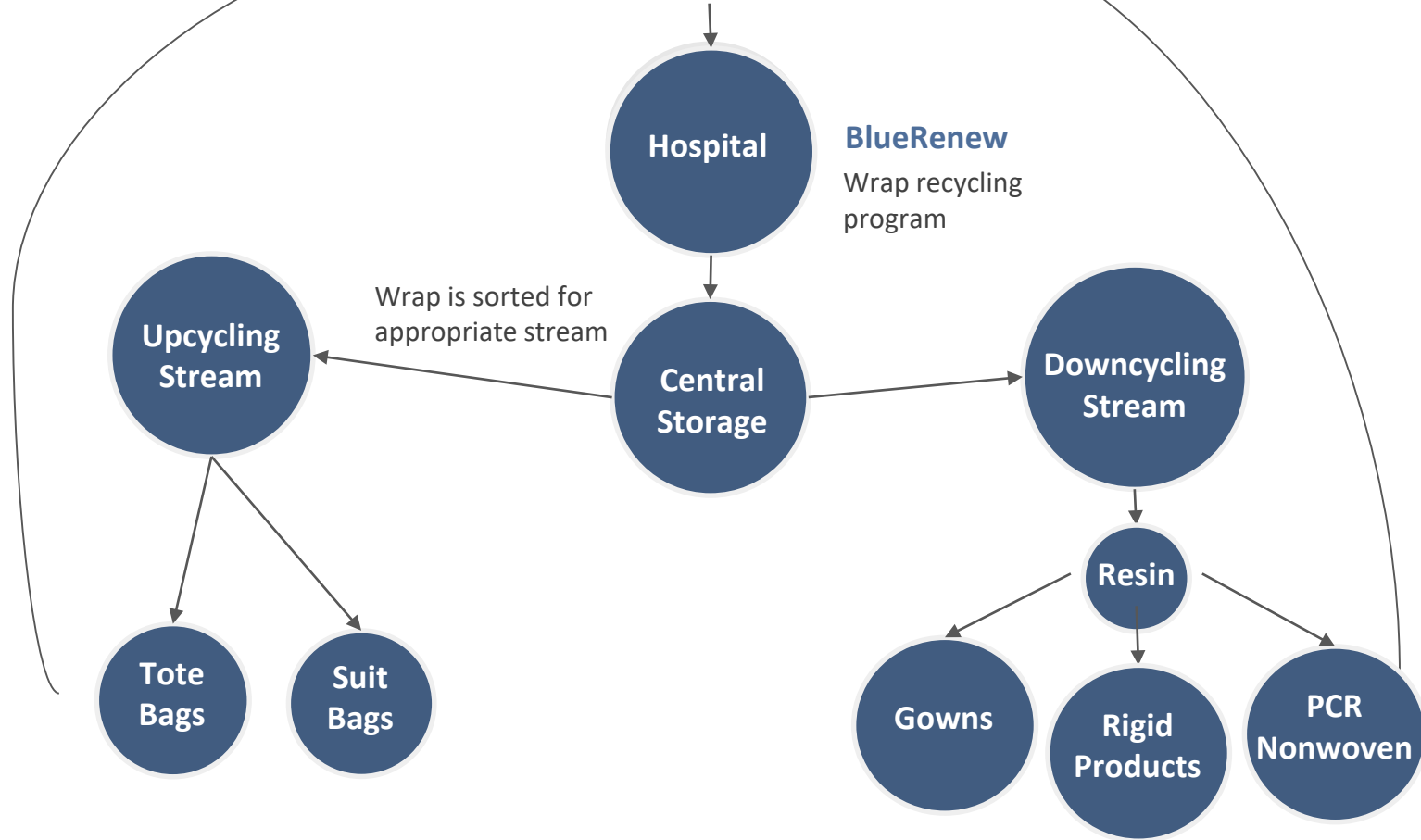


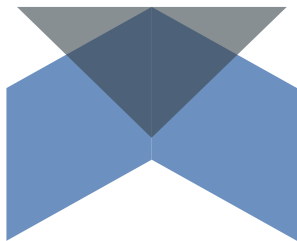
Providing recycling and repurposing solutions to create circular products made from sterilization wrap

# Circular Program Flow



**HALYARD**





**Thank You**