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WE THINK GREEN!

CELITRON ISS

The Green Way of Hospital Hazardous Waste Management

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Medical Waste Management Systems in the World

The Celitron approach

Categorizing waste

- Almost infinite aspects for categorization
- Non-hazardous
  - Municipal, construction and demolition, agricultural, …
- Hazardous
  - Biological, chemical, radioactive, …

Healthcare / medical waste

Healthcare waste is defined as the total waste stream from a healthcare facility

Healthcare general waste (**75-90%**)

- paper,
- plastic packaging,
- food preparation, etc.
- that haven't been in contact with patients.

Infectious / hazardous waste (10-25%), among which are

- **sharps** waste,
- body part waste,
- **chemical** or **pharmaceutical** waste,
- **radioactive** and **cytotoxic** waste or broken thermometers.

Managing the waste stream

Hazardous Medical Waste (HMW) management is complex and regulated, that is subject to (inter)national medical waste tracking requirements

1. Segregation and containerization
2. Intermediate storage
3. Internal transport
4. Central storage
5. (External transport)
6. Treatment
7. Transport
8. Final disposal

Healthcare facilities prefer using 3rd parties

Hazardous Waste is generated in Healthcare facilities

Hazardous Waste is packed in special containers and stored in facility unit is collected by third party

Hazardous Waste is collected off-site for treatment, and taken for disposal

Medical waste is a growing market…

- The main market drivers..
  - Aging population
  - Increased use of disposals
  - Wordwide environmental awareness and protection
- ..result an annual growth rate of 5.1% of the market
  - Total estimated U.S. Market size = 2007 $ 2.0 billion (2012 = $ 2.6 billion)
  - Total estimated Worldwide Market size = 2007 $ 6.7 billion (2012 = 8.7 billion)

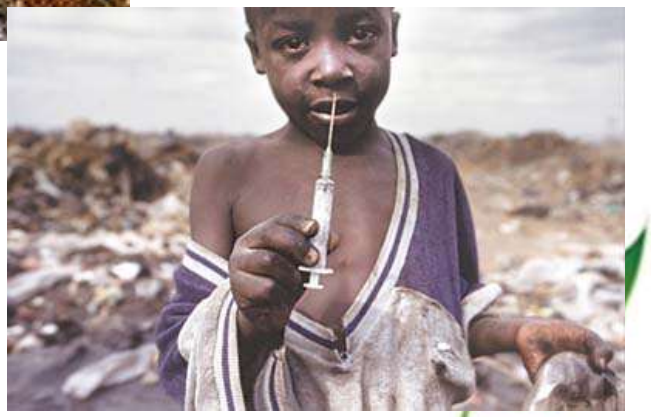
Source: U.S. Medical Waste Treatment, Containment, Management and Disposal Markets, 2007.

…but a growing challenge for healthcare facilities

- Expensive consumables
- Storage problems (space / temperature)
- Dependence on waste collectors
- Waste collecting prices are increasing
- Pressure to reduce costs

Risks faced with HMW

- Illegal / inappropriate disposal by the haulers
  - Dumping
  - Obsolete treatment technologies
- Accidents
  - Cross-contamiation
  - Spillage
  - Transportation



Common technologies for waste treatment

Technology	Advantage	Disadvantage
Incineration	Solution for pathological waste	Severe air pollution (dioxins, furans, POPs, etc..), greenhouse emmission, energy costs
Microwave	No air pollution	Doestn't work with metals and dry waste. Expensive operation
Chemical	Cheap agents	Creates further contamination
Autoclaving	No air pollution	Penetration must be secured

Making a decision..

		Treatment site	
		On-site ✓	Off-site ⊘
Treatment technology	Incineration ⊘		
	Non-incineration ✓	celitron medical technologies WE DO IT RIGHT!	

On-site conversion of medical waste to municipal in 30 minutes

HMW

- Dialyzers
- Sharps
- Tubing sets
- Gloves
- Blood
- Tissues
- Masks
- Syringes
- Scalpels
- Cloth
- Test
- Organic Materials
- Complete Sharps Containers

Celitron's Medical Waste Disposal Solution

Disinfected and destroyed Medical Waste

Treated Waste can be disposed as Municipal Waste

Liquids go into the sewage system; the solid waste goes to the landfill as ordinary waste

ISS technical features

- **Cycle duration**
  - Approx. 25 minutes
- **Processing potential**
  - 30-50 kg of waste per hour, 240-400 kg per shift
- **Treated waste external aspect**
  - Small-size homogeneous granules
- **Water consumption**
  - 50-75 liter per cycle
- **Power consumption**
  - 5-7 Kwh per cycle
- **Dimensions**
  - Height 200 cm * Width 125 cm * Depth 200 cm
- **Weight**
  - 880 kg

ISS product features

- **Easy to Operate**
  - User friendly 5.7” color display to activate disposal and disinfection process
- **Environmentally Sound**
  - Shredded waste is reduced to as little as 1/5 its original volume, without emitting harmful substances
- **Cost-effective**
  - Inexpensive operation and maintenance
- **Totally Safe**
  - Automatic locking door prohibits unauthorized interruption
- **Efficient**
  - A single unit can serve any clinic or laboratory
- **Compact**
- **Easily and quickly installed**

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Our solution guarantees you

- Zero environmental impact
- Zero logistics
- Ease to integrate into hospital facilities and processes
- Significant savings on current disposal costs
- Control future costs and service reliability

ISS Business Models

1. MARKET SURVEY

- Know the players in your market

2. REGISTER

- Know the legislation and adjust your strategy to that

3. DECIDE YOUR STRATEGY

- Sell/Rent
  - *unit*
  - *service*
  - *spare parts*
  - *other products and disposables*

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1. MARKET SURVEY

KNOW YOUR MARKET!

- **<u>Buyers and competitors:</u>**
  - **Buyers:**
    - ✓ *Hospitals and other medical providers on site*
    - ✓ *Waste management companies for on site or for small waste management centers*
    - ✓ *Army*
    - ✓ *Ship companies etc*

    KNOW THE QUANTITY&QUALITY OF WASTE THEY PRODUCE
  - **Competitors:**
    - ✓ *Waste management companies*
      - *know their prices for handling and transporting and for disposables*
    - ✓ *Other similar product producers*
      - *such compact unit does not exist!*

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2. REGISTER – A.

GO! **REGISTER AND RECEIVE YOUR PERMIT!**

- **<u>The unit currently has:</u>**
  - ✓ TÜV Rheinland certificates
  - ✓ CE mark
  - ✓ Accredited labor test by Wessling German labor in Hungary:
    - *detailed test results according to EU legislation and also*
    - *so called 'waste dumping test'*

Pleae note: In most of the countries a nationalization process is enough

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2. REGISTER – B.

TYPES OF PERMITS AND LAWS FROM COUNTRY TO COUNTRY CAN BE DIFFERENT!

➢ **<u>There are usually different permits for two following cases:</u>**

a) The waste producer (hospital /medical institutions) integrates the unit into its waste treatment procedure and runs the unit by themselves
b) There is a service provider and it has to apply to waste pretreatment permit

Integrating into the existing waste treatment procedure is always easier and cheaper process….

✓ **For both cases a so called test period might be needed:**

- *placing the unit in a hospital*
- *running the unit*
- *taking a labor test and a so called 'waste dumping test' and*
- *other tests if applicable in the given country*

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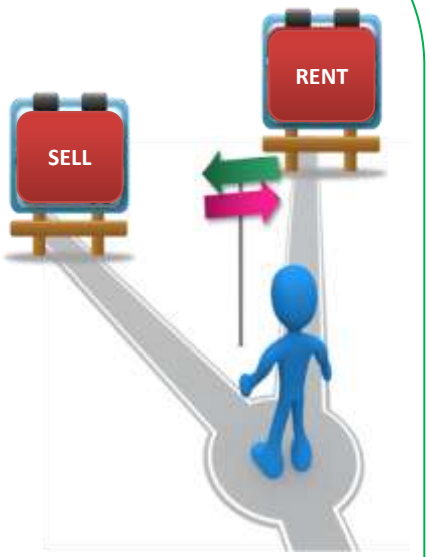
3. DECIDE YOUR STRATEGY – SELL VS. RENT I.

- **Sell:**
  - ✓ *unit + service after the warranty period of 3-5 years*
  - ✓ *spare parts and disposables:*
    - *special boxes designed for the unit*
    - *liquid waste collector containers*
    - *sterilizers for the containers etc.*



❖ **Service price:**

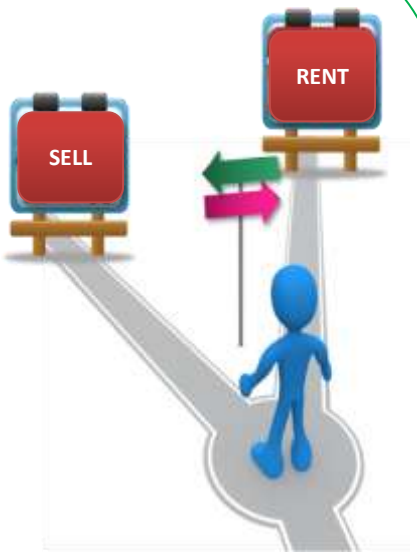
- Including spare parts
- Excluding spare parts

❖ **Warranty**

- Same as Celitron's
- Give one year to all the spare parts

3. DECIDE YOUR STRATEGY – SELL VS. RENT II.

- **Rent:**
  - ✓ *For a certain monthly price rent the unit for 3-5 years, which can also include **service** and all **water, electricity** and **communal waste** collection price*
  - ✓ ***No risk** for the hospital point of view*
  - ✓ ***Prices can be easily adjusted to the certain hospitals** (eg: 20% less then the current monthly cost, consequently even higher profit can be reached from distributer side)*
  - ✓ *Waste producers do not have to invest in buying the unit simply their **CF will be lighter***



In both cases it is good to be aware of the the following factors:

- *In case of buying the unit there are **funds available from WHO, EU** or other organization*
- *In case of selling to waste collector companies such funds are also available*
- *Investment with such a fund can be **decreased by 40-60%***
- All the **disposables** can be sold beside the rent price

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So Which Strategy Should You Choose?

With either business model…

…waste producers save cost…

…you stay environmentally friendly…

…the distributer
MAKES EXCESSIVE AMOUNTS OF MONEY!

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Thank you for your attention!