This circular water (waste) treatment system was designed specifically to deal with hospital waste (water) in a manner that minimizes environmental impact and maximizes resource recovery at a cost-effective rate, while at the same time adhering to the increasingly strict regulations that apply to the medical sector, now and in the future. The system is essentially a collection of proven waste (water) treatment processes wrapped in a concept that is feasible for on-site placement at hospitals without the necessity of extensive modifications to existing infrastructure. By using bioplastics as the basis for single-use materials in hospitals, this system is capable of effectively processing waste in such a way that waste output is minimized with 90% and at the same time energy and potable water is produced in a carbon neutral way.

**How to implement?**
- First a suitable sludge treatment facility
- Find hospitals interested in the system
- Further develop regulations in cooperation with local and regional governments
- Grazing more than outsourcing agency waste and cost
- CO2 neutral
- Introducing environmental impact
- Output is cleaner than fresh water

**Grazing**
- System is not patentable (could also be an advantage)
- Lower variability of bio-based products

**Benefits for stakeholders**
- Cheaper than outsourcing
- Direct and future cost reductions for hospitals
- No environmental impact
- Less hazardous waste
- Cleaner process water
- Further develop regulations in cooperation with local and regional governments
- No need for additional personnel
- No solid waste emissions

**Bioplastics**
- Cheaper than outsourcing agency waste and cost
- CO2 neutral
- Introducing environmental impact
- Output is cleaner than fresh water

**Weaknesses**
- Investment climate changes
- System is not patentable (could also be an advantage)
- Local regulations vary
- Further develop regulations in cooperation with local and regional governments
- Find a suitable sludge treatment facility

**Challenges**
- Convincing hospitals to change procurement
- Convincing hospitals to change procurement
- Still in pioneering phase

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**Facts & Figures**

Only 15% of medical waste is hazardous, but due to mixing of waste it contaminates otherwise non-hazardous waste, leading to environmental hazards and higher treatment costs.

Only 15% of medical waste is hazardous, but due to mixing of waste it contaminates otherwise non-hazardous waste, leading to environmental hazards and higher treatment costs.

**Bioplastics**

Bioplastics are in an early stage, meaning that the definition of bio-plastics can lead to different classification. There are two groups: non-hazardous and hazardous. The former is used to describe any type of plastic that is derived from a living organism, it is made from a variety of materials, including corn, soy, wheat, and other plant materials. The latter is used to describe any type of plastic that is derived from a living organism, but is not intended for use in applications that are similar to those of petroleum-based plastics.

**Steps System**

1. **Grinder** - All hospital waste, urine, leftovers and leftovers are transported to a collection tank (discussed later). The remaining wastewater is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

2. **Mixing Hydrolysis** - The remaining sludge is transported through a membrane that filters out sludge from the wastewater. The sludge is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

3. **Sewage** - The remaining sludge is transported through a membrane that filters out sludge from the wastewater. The sludge is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

4. **Sludge** - The remaining sludge is transported through a membrane that filters out sludge from the wastewater. The sludge is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

5. **Activated Sludge** - The remaining sludge is transported through a membrane that filters out sludge from the wastewater. The sludge is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

6. **Grinder** - All hospital waste, urine, leftovers and leftovers are transported to a collection tank (discussed later). The remaining wastewater is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

7. **Mixing Hydrolysis** - The remaining sludge is transported through a membrane that filters out sludge from the wastewater. The sludge is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

8. **Sewage** - The remaining sludge is transported through a membrane that filters out sludge from the wastewater. The sludge is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

9. **Sludge** - The remaining sludge is transported through a membrane that filters out sludge from the wastewater. The sludge is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

10. **Activated Sludge** - The remaining sludge is transported through a membrane that filters out sludge from the wastewater. The sludge is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

11. **Grinder** - All hospital waste, urine, leftovers and leftovers are transported to a collection tank (discussed later). The remaining wastewater is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

12. **Mixing Hydrolysis** - The remaining sludge is transported through a membrane that filters out sludge from the wastewater. The sludge is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

13. **Sewage** - The remaining sludge is transported through a membrane that filters out sludge from the wastewater. The sludge is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

14. **Sludge** - The remaining sludge is transported through a membrane that filters out sludge from the wastewater. The sludge is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

15. **Activated Sludge** - The remaining sludge is transported through a membrane that filters out sludge from the wastewater. The sludge is then transported to another grinder where it is grinded to even smaller pieces. These smaller pieces are then transported via fermentation and a remaining sludge rich in phosphorus and nitrogen.

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**Meet the team**

- Dan Mulder
- Josephine Nijstad
- Lixio Bod
- Martin Savenije

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**WEGE PRIZE 2016**

Livio Bod

THE HOLISTIC HOSPITAL

AN INTEGRATED APPROACH TO (WATER) MANAGEMENT

The holistic hospital is an approach in which the entire medical sector, now and in the future, is designed to be a carbon neutral environment. The hospital sector is a major player in the fight against climate change, and the increased population growth has led to the holistic hospital to address more sustainable medical outcomes. Therefore, there is a need to develop a technical system that enables the hospital sector to become carbon neutral, while at the same time adhering to the increasingly strict regulations that applying to the medical sector, now and in the future. The system is essentially a collection of proven waste (water) treatment processes wrapped in a concept that is feasible for on-site placement at hospitals without the necessity of extensive modifications to existing infrastructure. By using bioplastics as the basis for single-use materials in hospitals, this system is capable of effectively processing waste in such a way that waste output is minimized with 90% and at the same time energy and potable water is produced in a carbon neutral way.

**Current hospital situation and need for change**

The hospital sector is one of the largest industry sectors in the world, and is estimated to be the largest single greenhouse gas emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world. The hospital sector is responsible for a large percentage of the world’s waste, and is estimated to be the largest single waste emitter in the world.