2018

The nordics as world leaders in sustainable healthcare and why it matters to you

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Suggested citation:

TEM
VALUE THROUGH SUSTAINABILITY

Sustainability since 1984
Local – Regional – International – Self-funded – Non-for-profit
Independent - Foundation

Consulting
Trainings
Networks
R&D and projects
CSR Skåne
NCSH
Nordic Center for Sustainable Healthcare
History – Sustainable healthcare for 15 years

- Sustainable Healthcare by Sweden in London, Berlin, Oslo, Copenhagen
- CleanMed Europe in Malmö 2012
- Different international collaborations and boards
- Working with Nordic hospitals, but also in UK, Taiwan, US etc
- Big international and Nordic network

Innovation agenda 2015 – start of NCSH

- Swedish hospitals and regions are very forward
- The Nordics are world leaders and a link to research and innovation.
- Conclusion: Sweden is too small. We need to make it Nordic!
Local venues

National cooperation

Nordic center

Global market
The Nordic Center for Sustainable Healthcare aims to:

<table>
<thead>
<tr>
<th>Raise</th>
<th>the status and awareness of sustainable healthcare</th>
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<tbody>
<tr>
<td>Boost</td>
<td>innovation and investments in sustainable healthcare</td>
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<tr>
<td>Bring</td>
<td>world class solutions and ideas to the Nordics</td>
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<tr>
<td>Deliver</td>
<td>Nordic solutions &amp; knowledge to the world</td>
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<tr>
<td>What we at NCSH address</td>
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<td>----------------------------------------------------------------------------------------</td>
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<tr>
<td>• Energy efficiency in healthcare- and hospital buildings</td>
<td></td>
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<td>• Hazardous substances in medical devices</td>
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<td>• Transportation in healthcare</td>
<td></td>
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<td>• Climate impact from healthcare operations</td>
<td></td>
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<td>• Supply chain management and human rights in the supply chain</td>
<td></td>
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<td>• Reduction of dangerous chemicals</td>
<td></td>
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<tr>
<td>• Improving the sustainability performance in Med Tech and Life Science</td>
<td></td>
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<tr>
<td>• Waste water treatment and water management</td>
<td></td>
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<tr>
<td>• Single-use items</td>
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<td>• Green building design</td>
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<td>• Pharmaceuticals in the environment</td>
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<tr>
<td>• Waste management and waste reduction</td>
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<tr>
<td>• Infectious waste treatment</td>
<td></td>
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<tr>
<td>• Innovation &amp; export</td>
<td></td>
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<tr>
<td>• &amp; more</td>
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Sustainable Health
• Preventive
• Healing
• Before one becomes a patient
• Take a bike to work and quit smoking...

Sustainable Healthcare
• Hospital
• Patient, Healthcare Staff
• Building, material, technology, effectiveness, indirect, direct

Environmental Health
• Environmental impacts on human health
• Why do we become patients?
• Diseases caused by environmental impacts
Horizontal not vertical
What’s what?

- Life Science
- Clean Tech
- Sustainable Healthcare
Delegation and matchmaking in Israel

• 14-15 November 2018
• Sustainable healthcare as a leverage for smart and circular cities.
• Swedish, Danish, Norwegian and Finnish embassies
• Afeka Institute of Circular Engineering
• Energy, healthcare and innovation ministries in Israel
Nordic white paper on sustainable healthcare

• Part of the Nordic Prime Minister initiative on targeting the SDG:s.
• All Nordic countries and territories:
  • Iceland
  • Norway
  • Denmark
  • Finland
  • Sweden
  • Åland
  • Greenland
  • Faero Island
Internationalisation of innovation clusters

International collaboration - focus on climate solutions/needs and innovation

Plan: joint projects with partners in the Nordics - France - Italy - UK - Israel
Nordic Conference on Sustainable Healthcare 2019
Probably Helsinki or Oslo
New hospital in Grønnköpingkið city

- 453,000 inhabitants – 1.5 million in the region
- University hospital
- Totally new on a new location
- ER, maternity ward etc
- Planning to be built in 2021

Will be the greenest hospital in the world with state of the art solutions

All solutions must exist in a Nordic hospital and be available on the market
<table>
<thead>
<tr>
<th>Energy efficiency</th>
<th>Energy supply and production</th>
<th>Waste solutions</th>
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</thead>
<tbody>
<tr>
<td>- Nordic hospitals are very energy efficient, you will see the solutions that make that possible.</td>
<td>- Solar cells, geothermal energy, wind mills, heating and cooling from aquifiers - Nordic hospitals has it all.</td>
<td>- From waste bins to circular waste streams, we can handle hospital waste.</td>
</tr>
<tr>
<td>- We already have some examples listed here.</td>
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<tr>
<th>Materials and chemicals</th>
<th>Pharma</th>
<th>Transportation and logistics</th>
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<td>- New materials, circular materials, less harmful chemicals. We are working with that to.</td>
<td>- Pharmaceuticals is for patients, not the nature. The Nordics are working with that problem as well.</td>
<td>- How do we in the Nordics get staff, stuff and patients back and forward in the most sustainable way?</td>
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<table>
<thead>
<tr>
<th>MedTech and medical devices</th>
<th>ICT - solutions</th>
<th>Water treatment and supply</th>
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<tr>
<td>- MedTech with a sustainability focus – less energy, better materials, less materials, less travel.</td>
<td>- E-health, surveillance, reporting, statistics, digital solutions, AI - the future is here today.</td>
<td>- Clean water, we have it, how do we do it?</td>
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<tr>
<th>Waste water treatment</th>
<th>Architecture &amp; construction</th>
<th>Maintenance</th>
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<td>- State of the art waste water solutions.</td>
<td>- The best Nordic green design &amp; construction with focus on hospital buildings.</td>
<td>- How do we keep a green hospital green?</td>
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<th>Climate</th>
<th>Single use Items</th>
<th>Interior design</th>
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<td>- How do we reduce our climate impact besides the solutions above, and how do we prepare for climate change?</td>
<td>- We have too much, but we are working on it. Solutions that reduce the amount of waste.</td>
<td>- World famous Nordic and sustainable design - also for hospitals.</td>
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<th>Innovation arena</th>
<th>International arena</th>
<th>Food</th>
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<td>- With solutions not quite yet on the market, but very promising for the future. The solutions you want tomorrow.</td>
<td>- We all need help from our friends. Here we have excellent solutions from outside the Nordics eager to contribute to Nordic sustainable and green healthcare.</td>
<td>- We also eat, but we try to do it greener and more sustainable. How?</td>
</tr>
</tbody>
</table>
Grøn is the Danish word for green with the Nordic letter ø

Köping is a common part of old Swedish city names and refers to trading - typical Swedish ö

ő is a letter used in Icelandic, Faroese and Elfdalian. It was also used in the rest of Scandinavia during the Middle Ages.

(Grøn)(n)(köping)(ki)(ő)

If you add an n to the Danish Grøn you get the Norwegian word for green - Grønn

ki is the last part of Helsinki - the Finnish capital and the last part in the Finnish word for city - kaupunki
Why are the Nordics frontrunners?
Can others learn something?
Culture – Politics - Legislations

We want to do the right things
Everyone has a relation to nature
First EPA in the world – long traditions
Trust – Nordics have trust in the state and in each other
Strong legislations
Politicians can make unpleasant decisions
- The most expensive gas in the world?
- EU´s toughest EU laws?
Hospitals at the forefront

- Public procurement is a strong tool
- Management – sustainability is present
- Organisation – from environmental managers to 250 environmental coordinators
- Systems for environmental performance:
  - Environmental management systems – structure - Chemical management systems
  - Statistics on almost everything
  - Testbeds – Innovation procurement etc
  - Reports
System solutions

The hospital does not act alone. Part of an eco-system:

- District heating
- District cooling
- National recycling programs
- Regional biogas digestion
- Waste water treatment
- Clean energy
- Clean water
- Clean transportations
Innovative companies

- CleanTech with solutions for healthcare
- Medtech with good environmental performance
- Outside hospital technology – waste water treatment – energy etc.
- Authorities promote and fund innovations, testbeds etc.
- Sustainable healthcare is identified as 1 of 4 export strongholds
Holistic - circular

• Most hospitals work with all environmental issues
• Understanding of end of life – supply chain etc
• Top 5 % in everything – not best in anything.
1. **Sustainable & innovative hospitals:** This stronghold consists of different industries that participate in the construction and maintenance of hospitals – architects, companies within construction and engineering, solutions providers for increased energy efficiency and environmental performance, logistics providers and producers/suppliers of medical equipment.

2. **Smart digital solutions:** E-health and solutions that facilitate communication in the health sector.

3. **Ambient assisted living/care technology:** Monitoring, self-care solutions, rehabilitation equipment, etc.

4. **Personalized care:** Products based on collection and/or use of big data to create personalized health solutions.
Core qualities

The Nordic countries have some characteristics that makes the region attractive for research, testing and production of health tech.

— Equitable healthcare to all
— High quality and knowledge
— Early adopters of new tech

— Strong demand for welfare tech
— Strong tech environment
— Sustainable healthcare
In short

• The Nordics are most likely world leaders in Sustainable Healthcare
• How do we export that knowledge?
• How much is built into the society – system solutions etc?
• No one can act alone – we need solutions and ideas from others
• MedTech & Life Science are lacking behind
• Companies are a key factor to success
• There are differences between the countries in the Nordics
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