ESTHER

MNBS & EPOSS
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Innovative, advanced and integrated healthcare solutions

- Advance integrated global medical and hospital solutions to serve the full continuum of care
  
  Drive outcome for patients and value for health care providers to new dimensions contributing to more sustainable healthcare systems across Europe

- Develop the full potential of Digital Health
  
  Connecting devices, managing data from data gathering, to data analytics and data correlation, adapting artificial intelligence and new digital technologies. This includes the development of more individualized medicine, the hospital of the future, remote monitoring of patients, homecare vs hospital care and more.

- Leverage the fast development of key enabling technologies
  
  Photonics, advanced materials, micro-nano electronics, cybersecurity ... permitting the continuous development of innovative new medical devices as well as and new in vitro diagnostic tests
A patient journey through the continuum of care

**Pre-acute**
- Clinical pathway coordination
- Diagnostics
- Monitoring
- Prediction
- Prevention

**Acute**
- Treatment

**Post-acute**
- Remote monitoring and surveillance
- Education
- Telehealth
- Remission

**Homecare**

**Wellness**

**Medical care**

**Personal Health**

Clinical pathway coordination
Diagnostics
Monitoring
Treatment
Remote monitoring and surveillance
Education
Telehealth
Remission
Wellness
Prevention
Prevention
The health products and technologies in the continuum of care

Pre-acute
- Prediction
  - Multiparameter sensing
  - Genomic data
  - Biomarkers
- Monitoring
  - Wearables and medical devices

Acute
- Treatment
  - Mixed reality surgery (VR- and AR-supported)
  - Image-guided surgery
  - Regenerative medicine
  - Pharmaceutical therapy

Post-acute
- Remote monitoring and surveillance
  - Wearables and medical devices
  - ICT tools
- Education
  - ICT tools
  - Health-based social platforms
  - Patient portals

Homecare
- Telehealth
  - ICT tools
  - Sensors
  - Assistive and supportive robots

Post-acute
- Remission
  - Lifestyle management
  - Monitoring

Wellness
- Prevention
  - Lifestyle management
  - Apps
  - Trackers
  - Health-based social platforms

Personal Health

Medical care

Clinical pathway coordination
- AI
ESTHER: a solution to bridge the gap between IT and medicine to reach 4P
Disruptive technologies revolutionise healthcare

<table>
<thead>
<tr>
<th>New biomarkers (genetic and physiological)</th>
<th>Reprogramming of stem cells</th>
<th>3D printing of biomaterials</th>
<th>Improved sensors (crossKETs)</th>
<th>Broadband IT networks</th>
<th>Big Data, machine learning and AI</th>
<th>Smart phones and apps</th>
<th>Assistive healthtech and augmented reality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding of diseases</td>
<td>Regeneration of tissue</td>
<td>Artificial organs</td>
<td>Monitoring body functions/environment</td>
<td>Remote care and surgery</td>
<td>Assisted/better diagnosis</td>
<td>Personal avatar</td>
<td>Patient engagement</td>
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12/20/2018
ESTHER

- A cross-cutting and multistakeholder informal platform to speed up the development of, and patient access to, health technology in Europe

- Built with MedTech Europe

Towards a European Public Private Partnership in Horizon Europe (2021-2027)
The three pillars of ESTHER

- Innovative, advanced and integrated healthcare solutions *
  - Leverage the fast development of key enabling technologies...
  - Develop the full potential of digital Health ...
  - Advance integrated global medical and hospital solutions to serve the full continuum of care ...

- Open to stakeholders all along the value chain
  - From research and clinics to patients
  - From start-ups and SMEs to global companies
  - With public bodies (regulation, HTA, health agencies, regional authorities, public procurement in hospitals...)

- To better support European Innovative SMEs
  - Tailored services to SU/SMEs through innovation hubs
  - Synergies with ERDF – strong commitment of regions/clusters
  - Benchlearning about local experimentation, living labs, pilot deployments...

* See Nobel project metaroadmap
Esther’s interface

- **ETPs**
  - ETPN
  - EPOSS
  - Photonics 21
  - EU-Mat
  - ESB
  - EU-Textile

- **Industry**
  - Medtech-Europe
  - EFPIA
  - COCIR

- **Regions, clusters**
  - 27 regions from Vanguard Initiative

- **RTOs**
  - 20 RTOs from EARTO

- **Clinical centers**
  - 60 clinical centers from ECRIN ERIC

- **EC**
  - DG RTD, GROW, REGIO, JRC, SANTE, CNECT
Impact

At 5 years

• 10 pilot territories for equitable access to these solutions thanks to digital convergence, and added value generated at a local level.
• Value based and Outcome based funding models have become standards to reward innovation

At 10 years,

• 300 new start-ups and SMEs in healthtech that commercialize products and services for sustainable healthcare and well-being, based on the above objectives.
• Added-value generated, both for healthcare systems and for the medtech sector.

At 15 years,

• 1000 new innovative solutions for better patient outcome, based on convergence of KETs and digital, addressing key acute and chronic diseases

At 20 years,

• stable or decreasing ratio Healthcare expenditure/GDP in Europe, without significant difference between countries
Stakeholders

1. **Basic research**
   - Universities

2. **Technology development**
   - RTOs

3. **Medtech companies**
   - Clinical validation
   - CE marking

4. **HTA agencies, health insurances**
   - HTA, reimbursement
   - Regulatory approval

5. **CMO, OEM**
   - Notified bodies
   - Hospitals, CROs

6. **EMA, national agencies**
   - Hospitals, patients
   - Medtech companies

7. **Patient advocacy groups**
   - Patients

8. **Regulatory approval**
   - Hospitals, CROs

9. **Marketing**
   - Hospitals, patients

10. **Buyers**
    - Patients

11. **Clinical validation**
    - CE marking

12. **Hospitals, patients**
    - HTA agencies, health insurances

13. **Hospitals, CROs**
    - EMA, national agencies

14. **Notified bodies**
    - CMO, OEM

15. **Patients**
    - CMO, OEM

16. **Clinical validation**
    - HTA agencies, health insurances

17. **CE marking**
    - Medtech companies

18. **HTA, reimbursement**
    - Medtech companies

19. **Regulatory approval**
    - HTA agencies, health insurances

20. **Manufacturing**
    - Clinical validation

21. **Hospitals, patients**
    - Basic research

22. **Patients**
    - Hospitals, patients

23. **Hospitals, CROs**
    - Clinical validation

24. **HTA agencies, health insurances**
    - CE marking

25. **Regulatory approval**
    - CE marking

26. **CE marking**
    - HTA agencies, health insurances

27. **Manufacturing**
    - HTA, reimbursement

28. **HTA, reimbursement**
    - Regulatory approval

29. **Regulatory approval**
    - HTA agencies, health insurances
## Interface with Regions

<table>
<thead>
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<th>Regions</th>
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<td>Flanders</td>
<td>BE</td>
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<td>Wallonia</td>
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<td>Baden-Württemberg</td>
<td>DE</td>
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<tr>
<td>North-Rhine Westphalia</td>
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<td>Capital region of Denmark</td>
<td>DK</td>
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<tr>
<td>South Denmark region</td>
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<td>Catalonia</td>
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<td>Aragon</td>
<td>ES</td>
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<td>Navarre</td>
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<td>Helsinki Region</td>
<td>FI</td>
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<td>Auvergne-Rhône-Alpes</td>
<td>FR</td>
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<td>Grand Est</td>
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<td>Paris region</td>
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<td>Provence-Alpes-Côte d’Azur</td>
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<td>Occitanie</td>
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<td>South Transdanubia</td>
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<td>Piedmont</td>
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<td>Lombardy</td>
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<td>Emilia-Romagna</td>
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<td>Eastern Netherlands</td>
<td>NL</td>
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<td>Southern Netherlands</td>
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<tr>
<td>Oslo and Akershus</td>
<td>NO</td>
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<tr>
<td>Upper Silesia</td>
<td>PL</td>
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**24+ regions from 11 countries**
State of play

- Very active Working Groups
  - ESTHER-EARTO Medtech RTOs
  - ESTHER-VANGUARD regions and clusters

- Start of informal discussion with EC and industrial organisations about a potential PPP Health under Horizon Europe
Recent meetings

- Meetings with EC
  - Manuel NOBRE, cabinet Commissioner MOEDAS
  - Wolfgang BURTSCHER DDG RTD, Irene NORSTEDT Dir Health, Pilar AGUAR, Jean-Emmanuel FAURE
  - DG CNECT (pending)

- Meeting with MEPs
  - Christian EHLER, Peter LIESE and Markus PIEPER
Thank you for your attention